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## Original Contributions.

### FILLING MATERIALS, WITH SPECIAL REFERENCE TO AMALGAM.

BY J. N. CROUSE, D.D.S., CHICAGO.

At the present time there are but two preparations which come under the head of permanent filling materials—amalgam and gold. Besides these, however, gutta-percha, tin and zinc are useful in many cases; but the zinc preparations are so universally acted upon by the secretions of the mouth as to destroy their permanency; and while gutta-percha is valuable under some conditions, it is applicable only where strength is not required. The same may be said of tin. A superior filling can be made if the force of mastication does not come much in contact with it, but when subjected to this pressure it does not possess the necessary strength. Furthermore, the labor of making a tin filling is about as great as that required for gold, so there is but little tin employed.

Amalgam is the most commonly used of all filling materials for three reasons: First, because of the supposed ease and readiness with which a good filling can be made; second, because it has sufficient strength to resist fairly well the force of mastication, and third, because it is less expensive and so within the reach of the masses. I shall endeavor to prove that the first two of these characteristics are overestimated.

As generally used amalgam is easily manipulated, but the results are faulty in the extreme, and I wish to emphasize this proposition—that to make a perfect amalgam filling is a very difficult task, even more so than with gold, although not consuming so much time. With the alloys in common use it is impossible to make perfect margins, for they are what are called “easily manipulated,” and possess the characteristics of being plastic. An alloy which when amalgamated with mercury is soft and plastic, and easily crowded into the cavity in large masses, and furthermore is slow to set, can-

not be so packed into an ordinary cavity as to make a perfect filling, because the mass will shift and draw away from one part while being packed in another, and the only condition under which a fairly satisfactory filling can be made is when the cavity is in a convenient position so that the mass can be pushed into place with thumb or finger, or some instrument, to bring force equally on the entire mass at the same time. Even if well packed it is very apt before getting hard to be shifted by other forces, such as removing the dam or being displaced by the teeth in chewing. If I could induce each operator to make a few amalgam fillings in teeth out of the mouth and examine them with a magnifying-glass, my explanation would be more readily understood, and thereafter those operators would put in better fillings and would never claim ease of manipulation or perfection of filling.

In addition to this difficulty, it must be remembered that most of the amalgams in use shrink enough while setting to make them quite defective and often useless, so far as arresting decay is concerned. To illustrate this point I produce photographs showing enlarged sections of two amalgam fillings in steel tubes. Fig. A represents a perfect filling, made from an amalgam which does not shrink; and Fig. B shows a filling from an amalgam which always shrinks.

A factor second only in importance to shrinkage, which must be included in the causes of failure, is what has been termed by Dr. Black "flow," by which is meant the tendency of an amalgam after becoming hard to change form under pressure when in cavities where heavy force of mastication falls. The mass bends, pulling away from the walls and often bulging considerably out of the cavity on one side or the other. This gradual change in the form of an amalgam filling used to be called spheroiding. In this connection I show four blocks: Figs. 1 and 2 are made from the same alloy. Fig. 2 shows the original block, and Fig. 1 the same block after it has been subjected to a pressure of sixty lbs. for one hour, during which time it changed its shape 50 per cent—that is, it flattened out to just one-half its original thickness. Figs. 3 and 4 represent blocks made from another alloy. Fig. 3 shows the original block, and Fig. 4 after it has been submitted to sixty lbs. pressure for one hour, during which time it changed its shape only one-half of one per cent. These blocks were made in the same dies,

and in exactly the same manner, but blocks 3 and 4 were made from an alloy which is a quick setter, requiring a large amount of mercury and a great deal of trituration before the mass is thoroughly smooth and free from granulation. Its setting rapidly allows of heavy hand



Fig. A.

and mallet pressure without any free mercury being given off. Blocks 1 and 2 were made from a soft alloy, one which sets slowly and becomes plastic with very little mercury. Owing to its slow setting, heavy pressure cannot be used, and it gives off much free mercury under moderate pressure.

Following is an article from a recent number of the *British Journal of Dental Science*, which I publish in full because the author entertains such radically different views from those I hold:

**SHRINKAGE OF AMALGAMS.** By Thomas Fletcher, F.C.S., Warrington. "The way this ancient bugbear still crops up is curious. The persons who waste their time on this subject have not yet been able to see that the greatest shrinkage of the worst amalgam is a drop in the ocean as compared with the damage done by alteration of form or so-called spheroiding which occurs. One persistent experimenter, whose writings are well known, told me that one of the amalgams he tested had twisted so much that he could not measure it, and instead of discarding it as worthless, he actually clamped it down in his mould and gravely published the shrinkage. Any amount of reasoning would not make him see that if an amalgam lost its shape after hardening, the publication of its shrinkage was not a matter of national importance. The most curious experience I have had of this kind was with a non-shrinking amalgam. I engraved a monogram on an ivory box, with good anchorages, filled it with a non-shrinking amalgam, and polished all level after hardening. In six months this was "humped up" everywhere, although the anchorages held good. The amalgam was distinctly above the level of the ivory, and had apparently expanded upwards, but only at the expense of the sides, which parted from the ivory.

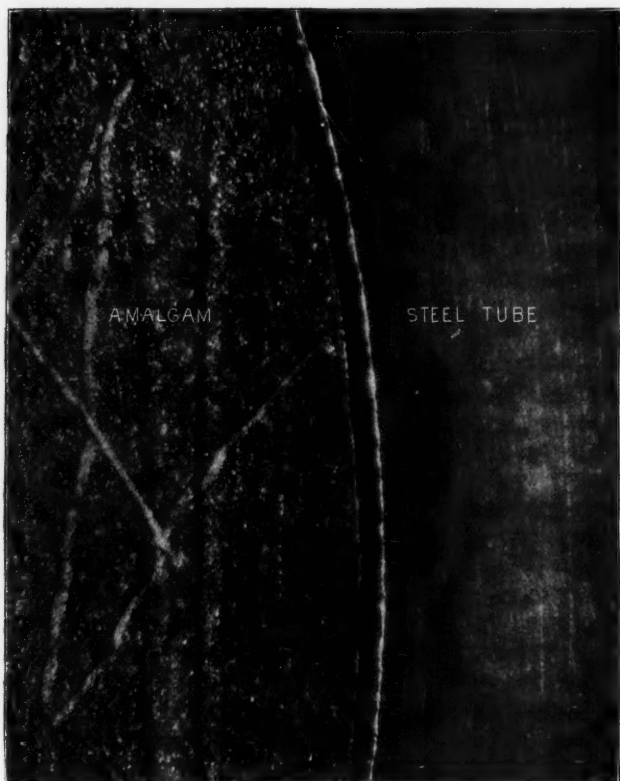
"If an amalgam shrinks it will naturally shrink in all directions, and therefore, if a plug is inserted in a glass cavity it will leak all over. It is very well known that this is not the case; the leakage occurs only near the top where the amalgam is not confined, it is always worst at the top edge, and rarely if ever extends more than half way down in the worst cases. If it were shrinkage only, the leakage would be equal all over the sides and bottom of the plug. It is surprising that so well known a fact should not have led experimenters to consider the matter more closely, and to recognize where the weak point really is. The method of proving the change of shape was published by me some twenty-five years ago, and has never been questioned by anyone who has made any careful experiments. I have not the slightest hesitation in saying that a micrometer as at present used is of no more service than a penny whistle for testing the working value of any amalgam.

"If those who waste so much time on the shrinkage question would devote a little of it to studying the retention of form, their work would be of some service. No shrinkage tests will give any idea of the actual value, and those amalgams which do not alter in shape are the only ones which are really permanent in the mouth."

From a careful reading of this article I am led to the conclusion that the author does not believe that any amalgam shrinks, or that



if it does, the worst case is not worth noticing. Figs. A and B are a good reply to his statement. Furthermore, that the altering of form which he calls spheroiding is the damaging property of amalgam. I am inclined to think that Dr. Fletcher errs because his



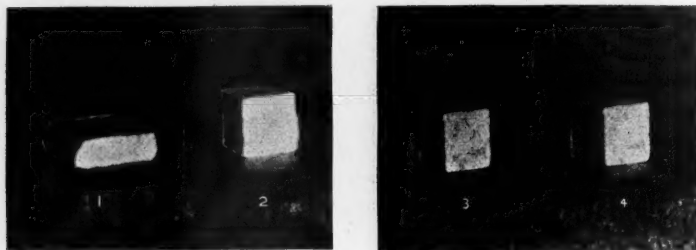
*Fig. B.*

tests were made in cavities in materials which were subject to change of climate, or hygrometric conditions. This is especially true of the ivory experiments of which he speaks. The fallacy of using this material was shown by Dr. Black some years ago, as he proved that ivory is saturated with moisture, and after the cavities are filled

and the ivory allowed to remain in the dry atmosphere of summer, exactly the same thing occurs which Dr. Fletcher cites as spheroiding. It is nothing more nor less than the moisture drying out of the ivory and causing it to shrink.

I have seen many amalgam fillings in teeth in the mouth which showed an evident bulging of some portion of the mass, but this change was clearly due to the pressure exerted by the opposing teeth, owing to the amalgam being malleable. The blocks before shown, Figs. 1 and 2, which flattened out, were made from a popular amalgam, yet it is faulty in all cases where subjected to irregular force. I have never yet found an amalgam which would not change its shape under sixty lbs. pressure in an hour, the various kinds ranging from one-half to fifty per cent.

The worst thing that an amalgam can do after being placed in a cavity is to expand and then shrink back twice as far as it has expanded.



Even where the mass expands only  $\frac{5}{10000}$  of an inch and then shrinks back to the original measurement, the margins will always be wide open, and the gap will increase in proportion to the amount of shrinkage beyond expansion. Many amalgams expand and then shrink, or shrink and then expand, for several hours after insertion in the cavity, and this double movement is always very objectionable.

For the sake of absolute accuracy in making tests, and to be in accord with other experimenters, I have always used cavities in tempered steel blocks. Dr. Fletcher's statement that the greatest shrinkage of the worst amalgam is not a drop in the ocean, etc., is a remarkable proposition, and although I have not used glass tubes, I think his statements in regard to tests with glass are equally erroneous. Many fillings of various alloys in steel tubes, the walls

of which are perfectly perpendicular, will shrink enough to drop out of the cavity, and I am confident the same would be true of fillings in glass if accuracy could be obtained with that material, but it cannot be.

Without going into the minute details of Dr. Fletcher's proposition, suffice it to say that I have not the slightest hesitation in stating that the micrometer is of the greatest service in testing the working value of any amalgam, and with it expansion and shrinkage can be shown to be one of the chief causes of failure of amalgam to arrest caries. The exact amount of shrinkage or expansion which any amalgam possesses, whether it has the dual movement of expanding and shrinking during the process of hardening, just how much change takes place, etc., can be accurately told.

The other important instrument in testing the qualities of amalgam is the dynamometer. With this it is possible to prove what combination of metals will make an amalgam that will change its shape the least under pressure, and will require the greatest amount of force to crush, or in other words, will have strength where it is most needed.

What then constitutes the best amalgam? One that does not shrink while or after setting, that requires a large amount of mercury to make it plastic, and that will not give up its mercury under heavy pressure, i. e., a combination which when thoroughly plastic can be put into the cavity and forced to place under heavy pressure without giving off mercury, and is stiff enough that pressure on one portion will not cause the entire mass to shift and draw away from the edges. This is what we call a stiff, quick-setting amalgam, and is thus distinguished from one which is mushy and slow-setting, as the latter cannot be packed perfectly and is liable to further damage by being shifted if packed with only moderate force. Furthermore, all soft, slow-setting amalgams change shape too readily under force of mastication, while a stiffer, quick-setting one, requiring heavy pressure in packing, is of course less likely to shift or break, and so will resist the forces of the mouth most perfectly.

The tendency of one part of the mass to shift while the other portions are being packed should be kept prominently in mind, also the fact that under pressure the part exposed will bend or change shape, for this makes it very important that all walls should be perpendicular and no thin portions left which are not thoroughly

anchored. This is one of the most frequent causes of failure. Take for instance the cervical margin, where so often there is a line of partially disintegrated tooth substance which is shallow and very inaccessible, extending from one side to the other, bucco-lingually. Unless the walls of this portion of the cavity are well prepared and well anchored at the remotest parts, failure will generally result from the fact that the amalgam at the shallow places will bend or change its shape just enough to let in moisture, and it would seem in time as if shrinkage of the amalgam had taken place, when in reality the fault was in the preparation of the cavity. I have had failures in just such cases, where I left shallow surfaces and did not get that part of the filling well seated, and if I had not been positive that the amalgam used did not shrink, I should have abandoned it as being faulty.

On account of the tendency above alluded to of the mass to shift, the matrix is especially valuable when the cavity involves both the approximal and occlusal surfaces, or when there are not four walls. If it is used heavy hand pressure, or what is still better, heavy malleting can be employed, and thus perfect margins and much greater strength more safely insured. To illustrate this point I would again refer to the dynamometer tests. Blocks packed with heavy mallet pressure while setting will resist almost double the force before breaking, and will have much less flow than the same blocks made with only moderate pressure. Another surprising fact is, that if a block of amalgam some weeks after setting be subjected to a pressure of sixty lbs. for an hour, and then crushed, it will resist fully one-third more force before breaking than a block of the same amalgam which has not been subjected to this pressure. While I have not made this test with all the alloys on the market, and so would not state positively that all amalgams can be condensed and made stronger if subjected to steady and even pressure some weeks after they have set, of those tried there has not been an exception and the characteristic will probably hold true for all.

In conclusion, is amalgam as good as gold for arresting decay of the teeth. Where there is not too much contour required, and all precautions necessary for the best results are taken, as good a filling can be made with a reliable alloy as with gold. Where great strength is required however, and thin walls need protecting, or where color of filling is an object, gold is to-day without a rival.

SUGGESTION IN NOMENCLATURE—"CAST" AND  
"MODEL."

BY WM ERNEST WALKER, D.D.S., PASS CHRISTIAN, MISS. ABSTRACT OF A  
PAPER READ BEFORE THE NATIONAL DENTAL ASSOCIATION,  
AT OMAHA, AUG. 30-SEPT. 1, 1898.

In the discussion of the report of the Committee on Nomenclature of the American Dental Association by the Academy of Stomatology of Philadelphia, in June, 1896, Dr. S. H. Guilford, the chairman, said: "A great deal of confusion surrounds the two terms *cast* and *model*. Some years ago I asked the son of Hiram Powers, the sculptor, what distinction sculptors drew between a cast and a model? He answered that a model was something that was copied; a cast was a body formed in mould. An arbitrary distinction has been suggested, so far as dentistry has been concerned, by making model serve as the title for a plaster cast which is to be reproduced in metal; cast to be applied to the plaster not so reproduced. The distinction is not fully accepted; the practice of calling all plaster casts models appears to be more acceptable. The committee therefore recommended that the use of the word cast be discontinued.

This recommendation does not appeal favorably to my judgment. That a distinction should be drawn between the cast and the model has been made very evident to me, not only in my relations with my laboratory assistant, but more especially in connection with college work, and it has been found advantageous to impress the distinction upon the minds of the students in this wise: The first step after the preparation of the mouth is the *impression*. This forms a matrix into which is poured the *cast*. It may be a metal cast which, if for swaged work, would be called a die, but if a plaster cast for the construction of a vulcanite, celluloid, or cast denture, the cast never becomes a model of anything, being simply a cast of the mouth. If, however, it is decided to make a die for swaged work by obtaining a matrix in sand, it then becomes necessary to make a *model*, by so shaping this cast with wax or plaster that it will accurately represent the die which is to follow; in which case the cast undoubtedly becomes a model of the future die. The successive steps and products are therefore represented as follows: 1st, impression; 2d, cast; 3d, model; 4th, matrix; 5th, die; 6th, counterdie. The consecutive series, cast, model, die and counterdie, is easily fixed in the mind and thenceforth there is no confusion surrounding the

terms, since each one represents a definite stage in the production of an artificial denture, and is clearly before the mind's eye as a well defined object, to which neither of the other terms in the series could properly be applied. If I hand my assistant an impression and tell him to make a plaster cast, he makes a cast in the ordinary way for vulcanite or celluloid work; but if I tell him to make a model, he wraps paper around the impression so as to make the cast thick enough to be trimmed into the proper shape for a model of the die which is to follow. It therefore appears to me that we should at least hesitate before adopting the word model to the exclusion of cast.

### COMPARATIVE METHOD OF TEACHING DENTAL ANATOMY.

BY A. H. THOMPSON, D.D.S., TOPEKA, KAN. ABSTRACT OF A PAPER READ  
BEFORE THE NATIONAL DENTAL ASSOCIATION, AT OMAHA,  
AUG. 30-SEPT. 1, 1898.

While many branches of science have been placed under contribution for material for the special education of those who are to enter the ranks of our profession, the advantages of the collateral branch of comparative dental anatomy, for the side lights it throws upon human odontography, have not been fully recognized.

In the old days dental anatomy was taught by the study of the human teeth alone, and not much of that, the limited human denture comprising the whole range of the subject of odontography taught by our books and in our schools. The teeth of lower animals were regarded as mere dental curiosities which had nothing to do with a knowledge of the teeth of man. His teeth were studied as were other organs of his body, as if he were a special creation, totally independent of and separate from other forms of life.

But all this is now changed; science and the method of study have been completely revolutionized. All life is now regarded as a unit: Man is but a part of the great realm of nature. He is but a fraction of the great aggregation of living beings upon our planet. He is not a special creation, but an animal like other animals of high and low degree. He has not a separate kingdom of his own, but is a vertebrate like other vertebrates. He has no exclusive class of his own, but is a mammal like other mammals. He has no order of his own, but is a primate and shares this distinction with the apes and monkeys, and the sub-order of the *Anthropomorpha* includes not only

man but the higher apes as well. Cope says that the skeleton of the higher apes resembles that of man more than it does that of the monkeys below them. This is true also of the molar teeth, as those of man and the apes are more alike than those of the apes and monkeys.

The organization of man being thus closely related to that of lower animals, it is but proper and rational that the organization of the latter should be studied in connection with that of man, for the benefits of the illumination to be obtained by the comparison of different though related types of structure. This has been fully recognized in other fields of human anatomy and physiology, which have become truly scientific only through the comparative method.

The study of the structure and functions of the organs of lower animals from the lowest to the highest types has thrown much light upon our knowledge of the various organs of man. The paths of their evolution have been marked out and their life histories are now well understood. The comparative method has thus been indispensable to a proper understanding of the life history of man and of the wonderful structure of his organs and the mysteries of their functions.

The *phylogeny* of man, i. e., the history of the evolution of his type from the lowest forms, has been made possible only by the comparative method. In his *ontogeny*, i. e., the development of the individual in the embryo, we have also learned much by the study of the embryo in comparing the various stages of growth with similar stages of development of lower animals, some of which remain permanent in them. It is well known that the human embryo, like that of the vertebrates, recalls types of lower forms at various stages of its development. So it is also with the various organs which have a course of development and a life history leading from the lowest to the highest types, and by careful comparison much is learned of the evolution of their structure and their functions.

As the comparative method has been scientifically applied to the study of other organs, we claim that it is but rational that it should also be employed in the study of the teeth of men. By observation of the teeth of lower animals we can learn much of the phylogeny of the human teeth along with those of other animals, and also acquire a better knowledge of their functional offices.

The life history of the teeth is of special interest to us as dentists and we must contemplate it from the scientific standpoint. We must



first note that the teeth, like other organs, were developed for a functional purpose—the reduction of food preparatory to digestion, and that this function is of stupendous importance to the economy. As the physiologist begins the study of the lungs or the liver or heart in the lowest organisms in which a suggestion of these organs may be found, and follows their development and the increasing specialization of their functions up through the various phyla to the highest forms of life, he obtains a scientific knowledge of the phylogeny of these organs and of their functions. He is thereby better equipped to understand these organs and their functions in man. The life history of an organ and the evolutions of its functions cannot be learned by the study of the organ in man alone, but our knowledge must be amplified and illuminated by the investigation of the same organ in other animals. This is the method that should be applied in our study of the teeth of man in order to make our knowledge of them scientific.

By the investigation of the teeth of lower animals we learn many things concerning the origin and development of these organs. We learn first that the teeth are morphologically mere dermal structures and appendages modified and elaborated for food-reducing purposes. This is well illustrated in the sharks, where the transition from scales to teeth is complete. The typical form of a tooth is a simple cone, which is exemplified in the fishes and reptiles. The process of eruption and succession of the teeth are illustrated in the varieties they present in different animals. The great variety of jaw movements found in different animals is important in the influence that this force has upon the form and size of the jaws and the masticating apparatus, and especially the tremendous effect it has upon the forms and position of the teeth. We notice also the philosophy of tooth forms in the evolution of types from simple to complex, and the relation that these types bear to the various functional offices that the teeth are called upon to perform in the work of food-reduction and mastication.

The adaptation of tooth forms to the various kinds of food employed is most wonderful and beautiful when studied throughout the whole realm of animal life. The various types illustrate in a peculiar way the variations in the forms of the teeth of man as adapted to their varied functions. We notice that his teeth are divided into different series, each one of which performs a distinct division of the general

functions of mastication. Thus the incisors were developed for and are adapted to cutting purposes. In our comparative studies we trace the cutting teeth back to their origin and then follow the evolution of the type down through the various phyla of animals to that of man.

We then take the prehensile teeth, the canines; and beginning with the earliest appearance of this form of teeth and following it downward through the various stages of their evolution, we have a most interesting study in observing the extraordinary forms that this tooth presents in various animals. In man the canine is much reduced, but its phylogeny is remarkable.

Next we take the molar series, and beginning with the earliest appearance of the crushing and masticating teeth follow them down through the different phyla of animals and study the many forms of molars as adapted to various kinds of foods. The development of the molar teeth from simple to complex types is a most fascinating study, for here great biological problems bearing upon the origin of our species have received illumination. The phylogeny of the human molar has been there made out, and through such discoveries light has been thrown upon the phylogeny of man.

In this connection we should study also the evolution and mechanism of the jaws and of jaw movements as illustrated by lower animals. And right here we must say there is no one branch of this important subject that is so much in need of illustration as that of occlusion, for its philosophy and mechanism are but imperfectly understood, and perhaps worse than imperfectly taught in our colleges. The student cannot acquire more than the vaguest conception of its most simple principles, and yet a thorough knowledge of occlusion is of vital importance to us in our everyday operations. Our lack of knowledge of this great principle is due to the fact that our studies have been confined to the human jaws, which as we well know are very rudimentary compared with the jaws of many other animals. We need therefore to go far afield to learn something more of the mechanism of the jaws from animals in whom it is more highly elaborated and specialized.

The relation of tooth forms to jaw movements is an interesting branch of the subject when worked out in a scientific manner by the study of the teeth of different animals. In all of them we find that there is an exact relationship between tooth forms and their

functions, and jaw movements. The principle is capable of easy demonstration although little investigation has been given to it. Years ago in an essay that has become classic among dental anatomists, Dr. John Ryder propounded his favorite theory of the mechanical genesis of tooth forms, showing how the forms of teeth were developed by jaw movements of a definite nature. The essay was a masterly presentation of a great but simple principle, and the wonder is that so little has been done in the further elaboration of the idea. It is a field that offers great possibilities of discovery for the student and investigator.

### TAKING IMPRESSIONS WITH MODELING COMPOUND.

BY CHAS. W. CRAWFORD, D.D.S., SPENCER, IOWA. READ BEFORE THE  
NORTHERN IOWA DENTAL SOCIETY, JULY 5-8, 1898.

While it may not be a welcome admission, I think I am safe in saying that the general public's estimate of the dentist depends largely upon his ability to make serviceable and attractive artificial dentures. This obtains at least in a country practice. Such being the case, the subject of impressions of the mouth is the foundation of the structure, and upon its accuracy depends the success or failure of the whole undertaking.

Whenever the subject of impressions is mentioned, the whole matter is usually settled by the almost universal declaration that plaster is the proper material, in fact the only material which should be used. Like the famous precept which governed the practice of many in days gone by, that "any tooth worth filling was worth filling with gold," the statement that plaster is the only safe material for impressions has obtained, but I hold that the latter statement is as erroneous as the first. We are all aware of the aversion of our patients to plaster, for many and bitter are the complaints against "the white mud," and in my efforts to find some substitute I began to study modeling compound.

A few facts concerning this material may be of interest. Modeling compound is composed of gum kaurie and sterin, incorporated with French chalk in the proper proportion, and coloring matter added to give the desired shade. Gum kaurie is an exudation from the tree or shrub *Drummaria Australis*, and is dug in large quantities from the soil in New Zealand. It is an amber-like substance, of a cream-white or amber color. That which is found on the surface

of the ground is worthless, because exposure to the air hardens it and destroys its value, but the accumulations under the surface are soft and pliable.

My method of taking impressions is as follows: Seating the patient in a straight-backed chair near the cuspidor, I instruct him to rinse his mouth thoroughly with cold water, continuing until I am ready to take the impression. Meanwhile, I soften the compound in a bowl of hot, not warm, water, and the impression-cup, which has been previously built up and shaped to approximately fit the mouth, is cooling under the faucet. Now the hot compound is quickly molded with the fingers into thoroughly cooled cup, inserted in the mouth, pressed to place firmly and steadily, and so soon as the compound is hard under the lips the impression may be removed.

The impression should not be pried up and down, front and back, to work it loose, but should be pulled down in front with steady pressure, the lip and cheek raised and lowered with the fingers, and the patient instructed to cough, the pressure meanwhile being steadily downward. The impression will presently loosen with a gurgling sound and is then placed under the faucet and thoroughly cooled. After this it is dried with a napkin, and the air-chamber or relief is cut or shaved with a sharp knife from the impression, when it is ready for the plaster to be poured into it for the model. For this purpose I use the ordinary builder's plaster or stucco, to be obtained at any lumber-yard. For many years I have used this material for models and investing with perfect satisfaction and considerable saving of money.

The complaint of some dentists that the compound crawls or changes its shape is due to the fact that it is not used hot enough. It must be used very hot to overcome this tendency to crawl, and with the mouth and cup previously cooled as I have described, there is no danger of burning the tissues.

In case of extreme absorption, where the ridge is only a flabby rim of flesh, an impression is taken as described, the groove made by the bent-over ridge is scraped out a little, and a thin batter of impression compound or plain plaster is poured into the impression and again pressed to place. This gives a more accurate impression than can be obtained with the modeling compound alone.

VALUE OF LIFE.—A patent-medicine wag says "whether life is worth living depends upon the liver."

## Digests.

**VOICE AND ENUNCIATION. THE SINGING VOICE AND SPEAKING VOICE AS INFLUENCED BY IRREGULARITY OF THE TEETH.** By Robert Eugene Payne, M.D., D.D.S., New York. A lisp in the speaking voice or any restraint, to disguise a deformity of the natural teeth, results in a loss to the singer. A lisp may be caused by so slight a disfigurement as the



Fig. 1.

malposition of one or two teeth. This condition also blights eloquence due to imperfect enunciation, and prevents the full effect of words and gestures, in an effort to cover up a deformity, though that deformity be slight. The three cases reported below are adults, neglected in early youth. The teeth involve conditions not often corrected in the manner described in this article.

*Case No. 1.* Miss A., age 26, the possessor of a contralto voice of unusual quality. A lisp was very noticeable in the speaking voice and this was carried into the singing voice. The two superior laterals were inside the arch, as shown by Fig. 1. Both malposed teeth were dark, because it was impossible to reach them with a toothbrush in their crowded condition. They were disfigured by two large approximal gold fillings that were always in evidence, as shown in Fig. 1. The position of the laterals caused a space between the upper and lower teeth, where the laterals should have occluded when the jaws were closed. The letter "s"

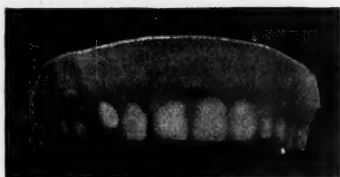


Fig. 2.

was imperfectly sounded, in an effort on the part of the patient to close this space with the tip of the tongue, and a very pronounced lisp was the result.

*Treatment.*—See Fig. 1 at the beginning, Fig. 2 and Fig. A from photograph when case dismissed. The four front teeth were large. Their crowded position accounts for the approximal cavities and gold fillings. By separating the teeth slightly with a bow separator

and removing approximately about the thickness of a piece of writing paper from both sides of each of the anterior teeth, twelve surfaces, I gained enough room to bring the tooth in position, and at the same time thoroughly clean out the spaces, removing all stains and reducing the width of the teeth, and thereby the fan shapes. I bound the two bicuspid and cuspid together with D silk twist, and then



*Fig. A.*

by running a thread from the two bicuspid, over the cuspid, and under the malposed lateral incisor, I drew the two laterals in position, one at a time. The three side teeth, being bound together, gave me strength, and the leverage over the cuspid, combined with the shrinking of the twisted strand, was sufficient to move the lateral a little every day. The threads were renewed about three times a week. It is always necessary to tie square knots, and the thread must be

taut. Both teeth were in correct position in less than sixty days. At the beginning of the treatment I placed a very thin spring plate in the mouth, extending back as far as the first molar to support the side teeth, and this gave me still more strength and leverage to move the front teeth forward. I took out two large gold fillings



Fig. 3.

and replaced them with enamel inlays, the half-moon English inlays put up in all sizes, that taper to a point, so that a cavity may be fitted accurately by cutting off at a point that will approximate the size of the cavity. The laterals were securely locked in position by slightly increasing the size of some small gold fillings in the anterior teeth at their lingual approximate surfaces. Note the result in Fig. A. The teeth have a clean, glistening appearance, are regular and symmetrical. There is an entire absence of the lisp.

*Case No. 2.* Miss B., a singer famous on both continents. The patient tried many times to induce her family dentist to correct the position of a lower central incisor projecting beyond the normal arch, but he always evaded the case and soothed her by calling it a "character" tooth. This one tooth being out of position resulted in the appearance of a number of teeth being out of position.

*Treatment.* See Fig. 3. I reduced the size of the four lower incisors slightly, as described in the first case, and drew the tooth in position in the arch in three weeks by means of fine silk thread, C and D silk twist. The two bicuspid were bound together on each side for strength. I then passed the thread around the second bicuspid, brought it between the lateral and central inside and carried it over to the opposite side of the second bicuspid. To tighten the thread, I bound it by cross threads to the teeth on either side, thus drawing the thread out of the way of the tongue and tightening it. After the central incisor was drawn in position in the normal arch, I ground the tops of all the lower teeth, using a fine stone in a stream of water, then rounded up the corners with a fine disk, bound them all in position by means of double oo silk and held them there for thirty days, renewing the



Fig. 4.



threads probably every ten days, tying low on the bicuspid and high on the anterior to bind them all securely in position. At the end of

of this time I securely locked the central incisor that was moved into position by putting in a small gold filling in the labial approximal aspect of the adjoining lateral incisor. The result is shown in Fig. 4. The charm of the face is enhanced by the regularity of the teeth, the restraint she



Fig. 5.

has labored under is gone, and there is perfect freedom.

*Case No. 3.* Miss B., age 25. Projecting front teeth shown in Fig. 5 and Fig. B, from photograph. The patient had been suffering from chronic alveolitis for a number of years; the upper left cuspid had been extracted in childhood by mistake. The tooth had erupted high up, the upper jaw contracted or did not develop fully after its extraction, and the lower arch being full, forced the upper teeth out of position until the protrusion was so pronounced that the teeth could not be covered by the lip. Pus discharged from five or six pockets. Notice in Fig. 5 that the bicuspids on the left side struck outside the arch, and the two central incisors were not only pushed forward, but to the right. There was no evidence of serumal calculus about the roots; three of the teeth were quite loose.



Fig. 6.

*Treatment.* This case was corrected by replantation, transplantation, implantation and amputation. Further the case was treated by devitalizing the pulps of three molars and treating the pus pockets with lactic acid, carbolic acid and resorcin. In the surgical treatment of this case I proceeded as follows: The two left bicuspsids were discharging pus copiously and were so far out of position that



Fig. B.

it was useless to try and draw them into the arch by any regulating appliances. I extracted both bicuspsids, reamed out the sockets lingually, and after removing contents of the pulp-chamber and filling the crown and root, I replaced one in the arch so that it would occlude with the lower teeth in the normal manner. In place of the first bicuspid that I extracted I transplanted a perfectly sound

cuspid, bringing it in the arch in proper position by reaming out the socket lingually. The left superior lateral was in normal position, but the left superior central projected forward and to the right in a very much distorted position. This tooth I devitalized and cut off even with the margin of the gum, cut out a V-shape piece to permit the crown of this natural tooth to be fitted to its own root in the



*Fig. C.*

mouth at the proper angle. The crown cut off and the root in the mouth were united by fitting a gold wire in the root, bending it to right angle and cementing the natural crown back on its own root in the normal position in line with the adjoining lateral. The right superior central was so loose that I extracted it, treated the socket and allowed it to entirely heal. At the end of sixty days I used the

palatine root of a sound mature molar, fitted a Logan central incisor to this root and implanted it in the space. I cut two flaps, the anterior long and posterior short; the long flap was brought forward to fill up deficiency due to shrinkage of the process. In order to thoroughly imbed a root, I use a small one to make it as lasting as possible; I use a mature hard tooth, extracted from a patient fifty to sixty years of age; they last much longer than young, soft teeth. Note the result in this case, Fig. 6 and Fig. C from photograph at the time the patient was dismissed. She positively refused to wear a bridge or a plate, and insisted that her own natural teeth must be preserved. The plan of treatment I followed was the only way to secure this result.

*Precautions in Implanting.*—By the use of a two per cent solution of cocain the operations were quite painless, and I have a record of many cases of implantation, transplantation and replantation of several years' standing, perfect in color, serviceable, comfortable as any teeth in the mouth. In all these cases the teeth have a fair chance for years of usefulness if every precaution is taken at the time of operating. Splinting by means of gold bands, plates, etc., is useless and the teeth become infected. There is only one way to ligate these teeth, and that is by means of fine silk thread. If you tie low on the adjoining teeth and high on implanted teeth, tie square knots, or a surgeon's knot and two granny knots and draw the thread taut but not too tight, it will hold the teeth securely in position. It becomes rigid, held by gomphosis, a pseudo-ankylosis, a close adaptation, not by actual bony union. I say every precaution should be taken; I mean every surgical precaution to prevent infection in the new socket; instruments, hands, tooth and all should be sterilized. Mature firm roots must be used and always smaller than the original root extracted.

After the extraction of a tooth shrinkage of the process always takes place to a greater or less extent and the space or socket will never be large enough to permit the return of a tooth or root of the original size, consequently a smaller root must invariably be used. I prefer to select a lateral root or the palatine root of a molar in nearly every case, and by cutting off the natural crown and fitting a porcelain I am enabled to shorten the root without cutting off the end, and when implanted it is completely surrounded by bony tissue. No gum should be cut away. Two flaps must be cut in every case

and the gum laid back, after injecting it carefully on both sides with a two per cent solution of cocain, or what is better, eucain.

Proper drills must invariably be used, and the roots of the adjoining teeth taken as a guide as to direction in cutting the socket; great care must be taken that the thin labial or lingual plates are not cut through. Many implantations look all right when the tooth is in position, but you will find on careful inspection that a V-shaped space has been cut, either in process or bone, anteriorly or posteriorly, or both, and the tooth is simply pushed up in the V-shaped space, the lingual or the labial part of the root implanted being simply covered by gum. It looks all right but it simply forms a pocket for infection at some future time. If the socket is cut in the bone, the tooth snugly fitted therein and securely ligated by means of silk thread, it will become firm if there is no infection, or if infection takes place it can be corrected by sterilizing the socket.

Once a tooth has become firm and rigid, if it is not allowed to occlude with the lower teeth to cause traumatism, it may be firm and useful for years. The chances for success are greatly in favor of single spaces, where one tooth is to be replaced, and where a plate or bridge would be disfiguring.—*Items of Interest, Aug. 1898.*

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**FATALITIES FROM ANESTHETICS.** It is with great difficulty that figures relative to mortalities from anesthetics are obtained, because neither the local nor general government makes any effort to especially chronicle the deaths from anesthetics; and in many instances the death is attributed to some other cause. Dr. Ernest Hankel in his recent book, "Handbuch Der Inhalation Anesthetics," states that he has made a very careful investigation into the merits of the several sleep-producing agents, and his research yields the following statistics:

Pental in 213 cases, one death.

Chloroform in 2,039 cases, one death.

Ether in 5,090 cases, one death.

Ethyl Bromid in 5,228 cases, one death.

Nitrous Oxid in 500,000 cases, one death.

**GUM ARABIC IN SOLDERING.** To prevent the solder from moving or dislocating while using the blow-pipe, add an equal amount of powdered gum arabic to the borax powder. The gum will not interfere with the function of the borax, and it insures

stability to the pieces of solder. When you desire to limit the solder to portions of the gold, paint the gold with a coat of rouge.

**CREOSOTE AND SUNLIGHT.** If you hope to retain the full strength and medicinal properties of creosote, it must be kept in a bottle of white glass, sealed with a glass stopper, and placed where it may receive the light of the sun. If placed in dark bottle and hidden from daylight it deteriorates and loses its desired qualities — *Trans. by Dr. B. J. Cigrand, from Zahnaerztliches Woch. July, 1898.*

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**ARSENIC IN DEVITALIZING PULPS.** The severe pains accompanying applications of arsenic to the dental pulp may be considerably lessened if an equal amount of antipyrin is used in connection with the arsenical paste. The antipyrin reduces the blood supply and hence prevents the congestion which invariably results from use of arsenic.

**PLASTER MODELS.** In order to produce plaster models which are dense, hard and will remain in perfect continuity when exposed to atmosphere, the Heidelberg Plaster Company has added to the water a liberal addition of *Ammonium triboricum*. The firm has had this simple method patented in all European countries, and it is claimed that statuary designs made from this composite material endure the abuse of transportation and exposure without damaging the device. Such plaster might be especially serviceable in moulding features to demonstrate the progress of correcting abnormal dental or facial outlines.—*Translated by Dr. B. J. Cigrand from Zahntechnische Reform, September, 1898.*

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**STUDY OF DENTISTRY IN FRANCE.** By I. St. Just, M.D., Paris. The laws have been modified at frequent intervals and new changes will probably be made again. No one can practice in France without a diploma from the French Government. Until recently a foreigner producing a diploma issued by a foreign faculty could easily obtain from the Secretary of Public Instruction a temporary or even a permanent permit to practice his profession, but this privilege is no longer granted.

In medicine the practitioners are divided into Doctors of Medicine, Officers of the Health, Pharmacists of the first and second class, Midwives of the first and second class, and Surgeon-Dentists.

A foreigner not only cannot practice, but he has not the right to affix the title of Doctor to his name, unless he specifies the foreign faculty who issued his diploma.

As to graduation in medicine, the law requires four years of studies, but the student is compelled to produce his diploma of Bachelor of Letters and Bachelor of Sciences (natural and physical). This is hard for the foreigners, as it requires eight to ten years to acquire such diploma from the Faculty of Letters and Sciences.

The School for Dentistry was established only in 1886. The period of study is three years, and the student must produce a diploma of Bachelor, or a certificate of high studies.

A foreign dentist can practice in France after passing the examination, or he may be excused from part of the lectures. An American dentist is seldom refused the privilege of practicing, and this is due to the late Dr. Evans.—*St. Louis Med. Brief, July, 1898.*

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CONTRIBUTORY CAUSES OF ANTRUM DISEASE. By Dwight L. Hubbard, M.D. Read before Central Dental Association of Northern New Jersey, May, 1898. The antrum of Highmore should be considered as one of the most important structures in the face, liable to many distressing affections, many times not recognized, and bearing an important relation to chronic catarrhal difficulties which render life miserable. I would not magnify unduly the affections which are liable to attack the mucous membranes continuous with the antrum as well as the antrum itself, but I do desire to call attention to the fact that trouble in this sinus is very much more common than is supposed. It is of simple inflammations that I wish particularly to speak. That pain in the teeth contiguous to the antrum may exist without real trouble with the pulp or any of the different parts of the tooth structures is a demonstrated fact, and I speak of these difficulties from the standpoint of a rhinologist, rather than from that of the dentist or oral surgeon.

"Protect us from our friends" is an old saying, but it is particularly applicable here. Toothache in this region does not always signify that the tooth should be interfered with. I would, before the tooth is opened, have you investigate other conditions and ascertain whether an extended inflammation from the nasal membranes to the mucous membrane of the antrum through the ostium is not a contributing cause. It is not necessary that the tooth socket should



project through the alveolar process as far as the antrum in order to have pain with antral inflammation. Sympathetic or reflected pain may be reduced in a first or second molar by means of an intense inflammation of the antrum, though it be only the result of irritation through nerve anastomosis or by ganglionic reflex. Pain in these teeth does not always signify the presence of pericementitis or other local difficulties. In such a case no results would follow the use of the usual treatment, but (experimentally) pain will be relieved at once by means of a 2 per cent solution of cocain sprayed into the nasal cavity and the chambers thoroughly and antiseptically cleansed and treated, both locally and constitutionally. I do not speak of the use of cocain as a means of treatment, but to illustrate the fact that by its effect upon the vaso-motors of the turbinated bodies of the nose the antrum will be exposed, thus permitting an easy access to the antral cavity; and also to demonstrate the fact that in a state of acute inflammation the sinus is closed and the products of inflammation are pent up within it, thus preventing not only exit of the products of inflammation, but any possibility of the aeration of the cavity, which I believe to be a necessity to the proper restoration to a healthy condition.

*Relation of Antrum to Contiguous Territories.* Let me illustrate the relation existing between the nasal and all the continuous and contiguous membranes of these fossæ and cavities. Headache is caused generally by a vaso-motor disturbance producing stasis, congestion, hyperemia, etc. Whether it be caused by intranasal pressure or not, the use of cocain will, by contracting the blood-vessels locally, as also acting generally upon the whole circulatory system, relieve the consequent headache in the two ways indicated, viz., by reflex action from the intranasal relief and by its general effect. Headache of the ordinary congestive type will be relieved in this way when there is no congestion of the nasal membranes. So much the closer then is the relation between these membranes and the interior of the antral cavity. I take this means of illustrating this principle because it at the same time proves the pathological relation between them. Teeth have been sacrificed because this fact has not been recognized. It is quite as important to investigate the nasal fossæ for etiological factors in cases where the tooth structures are in a healthy condition, as it is to ascribe the obscure cause to a neuritis or to trouble within the tooth which

it is supposed has not manifested itself in inflammatory disturbance in the contiguous structures.

It is too often stated that antrum disease must be of a suppurative nature in order to be serious or to cause disturbance in other parts, either reflexly or by direct absorption and infection. A common coryza means that the antrum membranes are also involved, because the structure is continuous and communicates by means of the ostium maxillar. It is to this everyday affection that I would call your particular attention and to point out some of the methods by which we may be able to prevent results which would otherwise become serious, not only in the antrum but in the teeth.

Coryza is a symptom and not a disease. The disease which causes the coryza is an infective inflammation of the mucous membranes of the head cavities, resulting in congestion, hyperemia, stasis, hyperplasia and hypertrophy, and the final outcome of repeated attacks may be induration, addition of new material forming benign tumors, or by certain disturbances in their structures, forming tissues foreign to the natural cellular elements and organizing into malignant growths. So we see that the results of simple colds often repeated are not so trivial as to excuse our neglect, but should receive our careful attention. A patient often applies for relief, stating that he has taken cold "in his teeth." You treat the tooth which appears to present reasons for being disturbed. It is well to correct any variation from the normal, but do we always think of the possibility and the probability of the trouble in the parts above? Under these simple circumstances trouble in the antrum is often set up, disturbing the tooth during the acute attack when it is not the cause. However meritorious or essential it may be to correct the difficulty, it is the part of broad conservatism to recognize the possible existence of other causes, and to postpone our treatment of a condition which is not a cause until the danger of disastrous results of the interference has passed. The point may seem far-fetched, and the argument will be brought forward that in the normal condition of anatomical structures there is no communication between the tooth-socket and the antrum. But if the histological structure of the alveolus at this point is studied it will be found to consist of very porous bones abundantly supplied with all the conditions which make capillary communication not only a possibility but a probability. "But the floor of the antrum is protected by mucous mem-

brane." So much more is it liable to absorption of purulent material, on account of the absorbents being located in the sub-mucous layers and in the areolar tissue underlying all mucous membranes.

*Abnormalities in Nasal Cavity.* With a view to the methods of treatment, I wish to speak of the abnormalities often found in the nasal cavity, the existence of which would direct our attention to the only rational treatment for cure. Let us follow the principle that it is never admissible to effect relief by indirect methods when we can use those which are direct. To illustrate: It would not be admissible to enter the antrum from below by means of extracting a molar tooth, when hypertrophy of the middle turbinated body is of such magnitude and nature as to block the ostium and cause pressure upon adjacent structures, thereby confining the products of inflammation, whatever they may be, within the cavity. As I have stated before, repeated colds are largely responsible for much damage to the antrum, when constitutional dyscrasias are of such a nature as to promote hyperplasia, followed by hypertrophy with all its consequences. If it should become purulent, degenerated to an atrophic condition, suppurative or necrosed, we will certainly relieve the temporary difficulty by going in through the alveolus. But do we thus surely remove the possibility of return of difficulty in the future? By no means. The recurrence of an acute attack will cause fresh trouble, and we have done only what relatively we would accomplish in mitigating the sufferings of a headache by giving antipyrin. When the middle turbinated is in the condition stated it is a foreign body, and there is as much reason for its removal (that is, that part of it which may be an offense) as for the removal of a bean or other foreign body which may have been accidentally introduced. By this means we make drainage a possibility and irrigation of cavity of the antrum easy. It is a principle in surgery that we should always drain at the most dependent point. Sometimes there are good reasons why this should not be done, and we are dealing with one of the instances now where it may be safely done in another way. Upon the removal of the portion of the middle turbinated which is the means of blocking the ostium, the congestion in the mucous membrane of that canal and of the whole of the antrum will be relieved. Thorough irrigation can be effected and drainage made possible by making the ostium the lowest dependent part in the position of the head for that purpose. Lying on the side will

make the ostium the lowest point. The slight inconvenience is better than the sacrifice of a tooth which might have been saved, as also the unnecessary surgery, which is the nightmare of the sufferer. The operation of removing the offending portion may be made painless and is much more necessary than removing the tooth and drilling through the alveolus, inserting a canula and tedious or prolonged treatment. We accomplish two things instead of one—curing the disease and preventing the atrophic shrinkage of the nasal membranes, which is almost sure to follow such interference with nasal circulation.

Above I spoke of the different results of inflammation. These results are manifested in many ways, some of which are as follows: Benign nasal myxomata, commonly called polyps, which not only often spring from the middle turbinated body, but from the interior of the antrum; fibroid degeneration of the mucous membrane; hyperplastic enlargement of the inferior turbinated body, blocking the inferior meatus of the nasal space and interfering with the aeration of the antrum, as well as damming up the secretions; thickening of the mucous membrane of the nasal septum, in turn causing hypertrophy of the turbinated bodies otherwise normal; spurs on the cartilaginous and bony parts of the septum, causing an excessive flow of acrid mucous, which gives rise to chronic catarrh, making infection of adjacent membranes probable; syphilitic disease of the ethmoidal and sphenoidal sinuses, a direct infective medium for trouble in the antrum; purulent ophthalmia, causing degeneration of the orbital cavity; and sometimes necrosis of the orbital plate which so thinly divides that cavity from the antrum, and many others which are direct causes of antrum disease. It is not my purpose to discuss these, but only to point out the dangers arising from them, and to remind you that they should be considered in connection with any disease of the maxillary sinus, no matter what the cause may be.

I wish to call attention to the often unnecessary operative work performed upon the antrum. Like all parts of the body, nature repairs better at times when it is not interfered with. All surgery and therapeutics are simply the means of assisting nature in her beneficent work. Further than this the rule should be "hands off." The warning signals should be heeded, but before we strike the enemy watch the movements and observe the tactics. Circumvent with stringent measures when being worsted and do not wait until

the breastworks are broken down before the artillery is brought into action.—*Items of Interest, August, 1898.*

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**DOUBLE RESECTION OF THE LOWER MAXILLA.** By Edward H. Angle, D.D.S., St. Louis. In the last issue of the *Dental Cosmos* was published an account of the double resection of the lower maxilla of a patient in this city—probably the first operation of its kind. As the writer was first to suggest this operation, and has for four years been discussing with surgeons its prognosis, some suggestions as to technique and plans of fixation may not here be amiss, especially as he believes that if the operation be properly performed it may become of considerable use and importance, for in those extreme types of malocclusion, where the upper teeth are greatly receded and the upper lip consequently much sunken in, which are familiar to every one, the proper functions of the teeth have become almost wholly impaired, as well as speech greatly interfered with, and the appearance of the patient transformed to marked deformity, constantly attracting attention and comment, and a source of humiliation to the patient; and if he be possessed of a sensitive nature his condition becomes truly pathetic. Any orthodontic procedure is powerless to render improvement, and double resection becomes the only resort. If then the operation can be made practicable, certainly it must soon take its place among the useful operations of modern surgery.

The plan of operation which I would suggest in these cases is that careful photographs be first taken of the patient, and two accurate models made of the lower dental arch and one of the upper which will show as much of the gums and form of the jaws as possible (which was not done in the case reported.) One of the plaster models of the lower jaw should then be sawed through and the sections removed. The positions and extent of these sections must be carefully experimented with until the three remaining sections of the plaster model can be made to best harmonize with the upper arch, and the teeth be in best possible occlusion with those of the upper jaw. These sections of the plaster model should then be cemented or waxed together, and over this reconstructed model a vulcanite or metal splint should then be formed, and by careful comparisons and measurements of the reconstructed model with the uninjured model, the exact size and form of both sections of bone to

be removed should be determined, so that there may be no guessing as to the relations of the bone, and complete apposition of the ends be made possible.

As there is more or less lingual inclination of the lower incisors in all of these cases (most pronounced in some), it is certain that the sections of bone to be removed must not be parallel on their sides as they were in the case reported, but wedge or V-shaped, if we would gain the best positions and consequent occlusion of the incisors, as well as appearance of the chin.

The teeth having been thoroughly cleansed just previous to the operation and the splint in readiness, the sections of bone corresponding accurately to those determined upon, as already described, should be removed, the anterior section placed in apposition with the posterior sections, and the splint placed in position and cemented upon the teeth with thinly mixed oxyphosphate cement; and if the operation has been skillfully performed it will be found that the most rigid and immovable support is given to the reconstructed jaw, a plan far more efficient and in keeping with modern plans of aseptic surgery than is possible with that crude, unstable, and unmechanical plan of wiring the ends of the bone together which was employed in the operation reported.

It seems remarkable that surgeons will persist in ignoring the natural and stable attachments which may be given through the teeth for the fixation of jaw-bones, and will still continue to wire the ends of the bones together in the treatment of fractures of the maxilla, notwithstanding the innumerable failures to gain union which have been reported and which are constantly occurring, not to mention the faulty occlusion established as a result of this method of fixation. The plan of making wounds which must become septic, on each side of the wound designed to treat, might have been excusable in the days of Buck and Kinloch, but modern surgery demands better methods.

Had the plan of treatment indicated been followed in the case reported, the writer believes the occlusion of the teeth would have been far better; the bones would have become united as speedily and with as little inconvenience to the patient as we know is possible and now so commonly gained when an ordinary double fracture of the maxilla is properly treated. Two points, however, of much importance have been established as a result of this operation. First,

that union of the bones will take place; and second, that the vitality of the teeth in the anterior section of the bone was not impaired. These are the questions most often raised by dentists in discussing the practicability of the operation.—*Dental Cosmos*, August, 1898.

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**TREATMENT OF CERVICAL BORDERS.** By Safford G. Perry, D.D.S., New York. Read before the Academy of Stomatology, April 26, 1898. From whatever point it may be considered, the cervical border presents the weakest portion of every approximal cavity. It is inaccessible, anatomically weak and, most important, is from its position most vulnerable to the insidious agents that destroy the teeth. In considering this border, then, we have to contend with the most difficult conditions ever met with in the care of teeth, for it goes without saying that proximal cavities as a class are the most troublesome in the mouth.

Logically, the first thing to consider is the preparation of this border for the reception of whatever filling material may be used. Here we meet at once with an anatomical condition that must receive most careful attention. I refer of course to the increasing thinness of the enamel as the cavity extends towards the root of the tooth. Of course we must cut until we have reached solid structure, no matter how far we have to go, but here we are met by the question, What is solid structure? Strictly speaking we might cut up on the root, even above the border of the enamel, and not find it. It may be answered that we had better do so if we cannot. To this I assent in most cases, but not by any means in all, for some teeth are in a condition that a solid border could not be found without going far under the gum, and then the cavity could not be filled and finished in such a manner that the gum would ever again remain perfect along this border. I am convinced that ruthless disturbance of the gum is given little heed to by most operators—by many who still with a separating file destroy the perfect contour, in spite of all that has been written and said against this practice during the last twenty-five years, and by others who are such radical contourists that they cannot rest until they have cut even small cavities up under the gum and made large fillings that shall have free edges, and that along the cervical border almost invariably leave a slightly disturbed condition of the gum, which bleeds readily when the floss-silk or toothpick and sometimes even the brush is used.



More than twenty years ago, in an article on the treatment of the proximate surfaces, I advocated in some cases this free cutting of even small cavities, but I never supposed the system would be applied generally and to teeth of good structure. I have repeatedly seen cases from the hands of extreme contourists, where every filling on the approximate surfaces of bicuspid and molars ran far under the gum, and where that tissue at the cervical border was ready to bleed freely at the slightest touch. I will grant that such fillings are safe—none could be safer—but in many of the cases I have seen the teeth of such good quality that I did not consider such radical operations necessary, for the teeth would have been safe with a filling that did not reach under the gum, and there would have been no disturbance of that tissue, and besides all this, there would have been less display of gold and infinitely less work and pain in performing the operations. In cutting therefore along the cervical border I believe it to be good practice to avoid going under the gums if the teeth are of good quality and the general conditions in the mouth are not destructive.

Then in cutting the diminishing enamel must be considered, and in cutting a little more in the hope of getting a better border there is danger of reaching such thin enamel that it may be a question if there has been any gain by this more thorough cutting. It seems to me there is no ordinary operation where nicer care and judgment are called for than in the preparation of this cervical border. In the preparation of it for gold there must be more thorough cutting than for any of the plastics, because the force required in condensing the gold might check and disturb an enamel border which might be firm enough to receive a plastic. Then the preparation must also depend somewhat upon the gold to be used. If cohesive gold is to be used there must be made one or two retaining points, or a retaining groove must be cut across the whole cervical border. If soft gold is selected it may be that no retaining point or undercut will be needed. Any dentist of experience would be glad if he could be free from the necessity of ever making a retaining pit or cutting a retaining groove in any tooth to be filled with gold. Then would be saved the devitalization of the border of the cavity caused by cutting the fibrillæ, the filling of a pit or groove which is likely to be imperfectly done, and the greater danger of crushing an enamel edge which has been weakened by the making of this pit or groove.

But there must be retaining grooves in every cavity to be filled with gold.

Luckily they need not always be at the cervical border, since the introduction of the matrix, making the fourth wall, becomes a great help in holding the gold in place, so that the retaining pit or the groove can be dispensed with in starting the filling, and when this is the case the mallet can be used without fear of crushing the enamel edge, and with the certainty of making a perfect adaptation of the gold. But if the pit or groove is omitted, there must be great watchfulness lest the gold may move after it has been condensed along the cervical border. I have had failures at this border years after when I felt certain that the gold had moved slightly without my notice before I had it securely keyed in by packing against the side walls of the cavity.

In a cavity which has been prepared along the cervical border without a pit or retaining groove, a mat of soft gold can be laid, extending a little beyond the cavity, and a matrix applied, pushing the protruding gold towards the neck of the tooth, and having the effect of holding the mat in place and making it possible to get perhaps a more perfect adaptation of the gold to the extreme enamel edge of the tooth.

If one can have both hands free, so that the gold can be held rigidly in place for the upper third of the cavity, or until there is no chance of its moving from its place, the absence of retaining pits or grooves along the cervical border may be a clear gain. This may involve the need of an attendant to hold the rubber out of the way, reflect the light, and perhaps use the mallet. If the operator prefers to use the mirror in packing the gold, or to reflect the light and select a matrix that can be fixed to the tooth, a pit or groove at the cervical border may be necessary, since the left hand is not free to hold the first pieces of gold in place.

In what I have said thus far I have in mind the use of a soft gold, which by slight annealing becomes cohesive enough to be packed as cohesive gold, and yet without entirely losing the soft quality. A gold of this kind answers the purpose so perfectly that I never use a strictly cohesive gold along this border. The introduction of the mat gold lessens the need of retaining pits, as this form of gold stays where it is placed better than any other, and can be used with less care in holding the first few pieces in place. Examination of the

surfaces of fillings made of this gold shows an accurate adaptation, and it may be that it may yet prove to be most suitable along the cervical border. It is really curious to notice how long a time is required for our profession to become conscious of the fact that the walls of even good teeth are frail and very destructible and that cohesive gold is a very hard and unmanageable substance to use against them.

In the beginning I spoke of the inaccessibility and vulnerability of the cervical border. There is a qualifying condition which I have never heard mentioned. In every approximal cavity, in beginning the filling, the end of the plugger forces the gold squarely against the cervical border, and as the instrument is applied at right angles the gold can be most easily and accurately adapted to the tooth with least force. As the curve of the cavity is reached on either the lingual or buccal aspect, this directness of application of force is lost, which doubtless accounts for the fact that so many failures commence at this point on either the buccal or lingual sides of the tooth. By the time the cavity is about one-third filled and until finished the instrument is packing along the sides of the walls instead of squarely against them. This natural position is the redeeming feature of the cervical border and has made it possible for many poor operators to make fillings that were successful at this point. I am under the impression that some operators, appreciating this fact of the square application of the instrument along this border, use thicker mats or masses of gold than they are able to condense thoroughly, even though considerable mallet force is applied. I have repeatedly seen fillings that were solid and fine in other parts, yet along this border were soft and even imperfect. In fact I think we are all inclined to work too rapidly in packing the gold here, and also that we use the gold in too large masses. To obviate this I have devised and used for many years plugger points which are adapted to bring pressure on the edge of the cavity, and which, being made flat on the side which rests against the matrix, insure a very perfect adaptation of the gold. These are made for cavities on the anterior and posterior sides of the teeth respectively.

There has been much said for and against a loose-fitting matrix, that is, one that stands off from the tooth somewhat so that the gold can be packed a little beyond the cavity, thereby insuring a

better adaptation at the edge. There is some reason in this, and yet it may be an open question if the time spent in finishing such a filling were given to packing the gold in smaller pieces, and with the instrument just described against a close-fitting matrix, an equally good edge would be secured. The peculiar "rake" of these points makes it possible to secure a perfect edge if one will be patient and careful. Of course, it is assumed that the matrix is bulged to conform to the natural shape of the tooth. If an equally good edge can be made with a close-fitting matrix, and as quickly when the whole operation is considered, there is a gain in saving the patient the disagreeable task of trimming the gold, which generally results in disturbance of the gum from the use of files or chisels and the dreaded sand-paper strips. In the early years of the matrix I was shy of it, fearing bad margins, but since having the plugging instruments described, my use of the matrix has increased, while my dependence on the separator has lessened.

A word more in reference to the cervical border. If gentleness and close care in filling are to characterize our method, and some soft or semi-soft gold is to be our main reliance, then I think we need not cut so radically in the preparation of this border. Of course this will be for the purpose of avoiding the encroachment upon the thin enamel, and to save the disturbance of the gum, as well as to make the operation easier for both patient and operator, as before stated.

I now come naturally to the consideration of plastics in their relations to this border. I selected this subject partly for one particular purpose—to emphasize the danger in using oxyphosphate of zinc at this border without preceding it by some insoluble and indestructible substance. It may be that it is not generally used in this place, but my observation is that it is, and without being preceded by any other indestructible substance. I am sure there is not one of us who would not to-day be crippled in our practice by the withdrawal of oxyphosphate of zinc, and at the same time there are not many of us who fully appreciate its danger. In the beginning I said that the cervical border was the most inaccessible and most vulnerable of any cavity border in the mouth. If against this border you will use a substance so liable to chemical disintegration as oxyphosphate of zinc, you will have intensified the conditions of danger, and although you have delayed the evil hour of the tooth's destruction, you have established a set of conditions that in time will bring it about with

almost scientific certainty. It would not be easy to estimate the number of pulps that have become exposed by the treacherous washing out of this material at the cervical border, thus allowing decay to go on quietly, without giving any intimation of its existence until too late. And the same may be said of the copper amalgam which was so much used a few years ago, and which dissolved at the cervical border in nearly the same manner.

What material shall we use, then, at the cervical border, if we have decided to put an oxyphosphate filling on an approximate surface? It depends upon the teeth. If in the front teeth it should be gutta-percha or gold. If in the bicuspid or molars it should be gutta-percha, amalgam or gold. I do not include tin, as that will be mentioned later. The need of any indestructible substance is not so great in the front teeth as in the bicuspids and molars. The teeth are not so broad, the cervical border not so sheltered, and the conditions taken altogether are not so treacherous. Gutta-percha is quickly applied to all these cervical borders and has the great advantage of being safe. Though in a few years after expanding and bulging out so that it must be trimmed off, it will finally rot and have to be renewed. It is a very safe substance to use, however, as any bulging and rotting will be detected, owing to the fact that the oxyphosphate placed on it will wear away and have to be renewed in two or three years at the longest, and at each renewal the exact condition of the cervical border can easily be ascertained.

This combination for very badly decayed teeth, particularly bicuspids, becomes in my judgment a very wise one to adopt. There will be generally two or three renewals of the oxyphosphate to one of gutta-percha. Teeth treated in this way may not increase one's reputation, because when the oxyphosphate wears away patients will come in saying the filling is out, but the operator can hear this undisturbed, because he knows at the cervical border it is safe and sound. With it a perfect adaptation can be made to the walls of the tooth, and it has the preservative quality.

For several years I have in many cases protected the gutta-percha from wear by covering it with amalgam instead of oxyphosphate of zinc. In such cases I have filled the cavities nearly full of gutta-percha and then covered them on the grinding surface only with a rather thin filling of amalgam. I have known such fillings to last many years, but there is one danger, namely, that of the expansion of

the gutta-percha causing the thin walls of the tooth to split off. This danger is not so great, however, if the amalgam is used only on the grinding surface and the gutta-percha is left free on the whole approximal surface. \* \* \* Gold can be used along this border to great advantage in many teeth so badly decayed that it could not wisely be used for the complete filling.

You will understand that I am speaking of these three substances—gutta-percha, gold, and amalgam—only as foundations at the cervical border for oxyphosphate of zinc. I have not included tin, for while in some places I consider it the most perfect of all filling-materials, I do not trust it in sheltered places on proximate surfaces, for the reason that it undergoes chemical dissolution. For this reason when it was advocated many years ago as well suited, pure or rolled with an alternate leaf of gold, for use along the cervical border, I distrusted it and used it but little. The few teeth that I ever filled in that way were afterwards repaired by replacing the softened tin with either gold or amalgam. If tin can be packed near the edge of enamel, and gold placed over it so that no tin is left exposed when the filling is finished, a durable filling may be expected. This is now done by Dr. Shumway, who finds that gold adheres to tin when rubbed onto it with ivory points. He rolls the tin in a compact roll and, cutting it in short pieces, anneals it over mica nearly to its melting point, and after packing in the cavity he burnishes the surface with an ivory point and then rubs cohesive gold onto it. He claims the union between the metals is sufficient to make a fine filling, the tin being protected from wear or disintegration by the veneering of gold. To be successful, he says the tin must be annealed and the filling protected by the rubber-dam from even the breath.

This is a proper place to add a few words in reference to the repair of gold fillings that fail at the cervical border. Purposely I did not allude to it while speaking of cavities that were to be filled with gold throughout. I have no means of knowing what is the general practice in these cases—whether it is removing the whole gold so as to get access to the defective place, or simply cutting out the decay and repairing with gold or amalgam, or even with gutta-percha. My own practice has been almost invariably that of repairing the defective place, if the body of the filling is good. If the gum in such cases cannot be held away by the rubber-dam, it



can be by a suitably shaped instrument, so that access can be had to the cavity from both the buccal and lingual sides, and the operation becomes a very simple one either for the use of gold or amalgam.

If a large gold filling requires repairing at this point, it is more satisfactory to do it with gold if it can be done accurately; but if the defective place is inaccessible, a thorough durable operation can be made with amalgam. The result is somewhat like that attained by using amalgam in the upper half or two-thirds of the cavity, and finishing with gold at the same sitting. The repairs I have in mind are only slight, however, and do not let the amalgam come in sight. The ability to make these repairs very easily is one reason why I am not as ready now as formerly to cut the teeth away so that each cavity on the proximate surface shall go under the gum. There may be objection on the part of some to the use of amalgam for these repairs. I think the inherent objections to amalgam do not apply with the same force in these cases as when used for large operations.

I have now a word to add in reference to the illumination of the cervical border. On dark days I concentrate the light by the condensing lens, held by an adjustable rod attached to an upright, screwed into the iron frame of the movable bracket attached to the chair. This intensified light when possible is reflected into the cavity by the ordinary mouth-mirror held in the left hand or by the attendant. Sometimes I reflect this concentrated light or ordinary daylight by a little mouth-mirror held by a rod attached to a weighted standard, which sets on the tray. The mirror is attached by a ball-and-socket joint, so that it can be set at any angle. For one who has no attendant this is convenient, as it leaves the left hand free to hold the gold in place in commencing a filling. These devices are somewhat in the way, but if one can become accustomed to them they are a real help. I have also used the electric light, but I have thought it rather trying to the eyes.

In closing, I wish to call attention to a certain form of matrix which I have found indispensable in the use of plastics at the cervical border. It is one which I call a hand-matrix, as it is attached to a handle which is to be held in the left hand. The matrices are made of thin steel with a lug soldered on the end which is to be placed on the lingual side of the teeth, and the handle soldered on the other. Some of them I have made from a single piece of



steel, as the soft solder is affected by the mercury in amalgam filling and they sometimes become unsoldered. If hard solder is used, so much heat is required that the temper of the steel is lost, and they do not keep their shapes as well as when they retain their spring temper. Those made from a single piece of steel are very durable. It is not, however, easy to make them wide enough for some cases, therefore I have some of them made by soldering both with hard and soft solder. I have tried various metals, but I find that steel having a spring temper is best. The only objection is that in using oxyphosphate of zinc there will be some corrosion of the steel, but this can be partly overcome by touching the surface of the matrix on a sponge charged with oil before using. These matrices have one advantage over all others I have ever seen. Being held by the left hand the operator has perfect control of them. The lug resting against the adjoining tooth near the gum secures a close fit at the cervical wall of the tooth to be filled, and by means of the handle the upper side of the matrix can be turned out and away from the tooth in such a manner as to give access to the cavity. After the filling is partly in, the matrix can be turned up to the tooth so that the contour can be kept. This adaptability of the matrix through the medium of the left hand makes it, in my practice at least, indispensable. The manner in which it opens up the cavity to light, as well as for the reception of the filling, must be seen to be appreciated. By pulling on it the lug draws it closely down at the cervical wall and holds it there firmly, and at the same time it can be turned off at the upper edge so as to reach the adjoining tooth, even though it is some distance away.

For this reason it is invaluable in cases where it is desired to exaggerate the contour of a tooth in order to close up a space. It is applied in an instant, and can be taken out and put back at any time, even though the filling is only partly in. For plastics it is almost perfection, and for gold it is also of great value. I have become so used to it that I use it for many of my gold fillings, in fact for nearly all where I can spare the left hand to hold it. It is so adaptable to the will of the operator that, having once become used to it, I cannot understand how it could be given up. I presented this matrix with the illuminating devices described above, before the New York Odontological Society in 1893, and they were illustrated in the *International Dental Journal* of that year. They

have never been manufactured for the profession and are therefore but little known.—*International Dental Journal*, Sept. 1898.

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EXPERIENCE WITH A FEW HOMEOPATHIC REMEDIES IN DENTAL PRACTICE. By William I. Wallace, M.D., Glens Falls, N. Y. Read before New Jersey State Dental Society, July, 1898. The teeth, though of a different structure from other tissues of the body, are still under the same general law of nutrition and growth. For that reason they are subject to the law of healing with those other tissues and organs, and the application of the law is limited only by the ability of the physician to select the appropriate remedy. In dental practice use is made of tangible and material substances, as gold and the various metals, acids, salts, alkalies, etc., in their pure concentrated forms. In the use of medicines, and especially homeopathic remedies, for the cure or relief of sickness and suffering, we deal with the vital processes which are visible and only discernible by symptoms presented of change in the various parts and tissues of the body.

The point upon which emphasis is desired to be placed is, that while everything is being done in a mechanical way to combat the effect of caries and other forms of disease, and restore the teeth to their normal condition, assistance of a very practical nature can be rendered by the appropriate remedy. This is especially true in such conditions as neuralgia, ulcerations of the bony tissues, etc.

Aconite and iodin are known and used probably by all dentists for the relief of threatened inflammation of the nerve or pericementum, acting as a counter-irritant. I have found aconite concentrated tincture applied in a cavity, where a paste of arsenic, carbolic acid and cocain completely failed, because of the excessive pain produced, to soothe in a few seconds, and after being sealed in for a few days to have devitalized the pulp, rendering the remaining treatment and operative procedures entirely painless and very satisfactory. This is because aconite is homeopathic to congested and hyperesthetic conditions.

*Aconite*.—Neuralgia of the fifth nerve is caused by cooling too suddenly when warm and perspiring, or from exposure to cold air, such as riding against a strong north or northwest wind. A few doses of aconite the third potency about half an hour apart will relieve very promptly, producing a gentle perspiration. Such

patients frequently come to the dentist thinking a decayed tooth may be the source of the trouble.

*Belladonna*.—In the earlier stages of pulpitis, in fact as soon as you are liable to be consulted, complaint is made of throbbing and sharp pain in a carious tooth. The face will be flushed, pulse rapid and strong, eyes more bright than usual, and pupils dilated. A few doses of belladonna 3 will soon cause your patient to thank you for the speedy relief.

*Mercurius*.—If the inflammation has been of longer duration and there is evidence of pus forming, yet extraction or evacuation is impracticable—a frequent experience in country locations—the tooth will be complained of as feeling too long; “it strikes its opponent before the others” and seems a little loose. *Mercurius* corr. subl. 30, a dose every hour until better, will prove far more satisfactory than any other aid you can render and the tooth may receive operative treatment at a future appointment with much less suffering. These cases get worse in the evening, having quite large cavities, and patients suffer agonies before midnight, yet experience little annoyance through the day.

*Chamomilla*.—Children are the greatest sufferers from toothache, probably because their teeth receive little care; also because of the excessive eating of sweetmeats. If you find them restless and fretful, quiet only when being held and petted, flatulent colic and diarrhea in young children, chamomilla 30 will quiet them and enable you to gain their confidence. Of course this applies only to the aching from caries even if extensive, but not to pulpitis; in such belladonna should be used, sometimes in alternation with chamomilla.

*Creasotum*.—A remedy daily used in almost every dental office, and of great value, is beechwood creasote. Its virtues are known to all present. Perhaps all may not know of the beneficial effect of the homeopathic preparations as 12 or 30 potencies. A patient, probably a child or youth, comes with cavities forming at the gingival line, the dentin wherever exposed excessively sensitive even to the explorer, showing acidity of the saliva. Also in the deciduous teeth of young children, sometimes a few months after they are erupted small cavities will form near the neck which soon will perforate and cut off the tooth; perhaps all of the incisors. In such cases creasotum 30 will produce wonderfully satisfactory results.

Charles B., aged between three and four years, was brought in one day with superior incisors gone even with the gums, pulps putrescent, gums inflamed and purulent. The root-canals were cleaned and thoroughly rinsed with calendula tincture, then temporarily packed with absorbent cotton, part of which was saturated with creasote, gently forced to apices of canals, the balance saturated with chloro-percha. The child was crying and suffering severely, so I could not be so particular as with older persons. The dressings were changed once or twice at later visits, then the canals were filled with gutta-percha. Creasotum 200 was given internally for a few days after first call. He experienced no further trouble, the gums became smooth and healthy, and caries that had started in other teeth was arrested, which I think demonstrated that the internal use of the remedy had marked effect. I did not think extraction advisable if possible to save the roots, as the space should be preserved for the permanent set when they developed. Results prove my course correct. An attack of neuralgia later caused by a cold yielded promptly to a few doses of chamomilla 30. No trouble has occurred since.

*Caries Prevented by Internal Remedies.*—May I present a little theory at this point. You who were present at that inestimably valuable lecture by Dr. Williams before the Odontological Society of New York City will remember the illustrations and statement of the process of caries; how intertubular cement substance of the enamel was first attacked and dissolved, thus loosening a few of the enamel rods or disks. This process steadily continuing causes the cavities. The saliva which almost continually bathes the teeth is of an alkaline reaction in healthy persons normally, but ill health or fermentation from sweetmeats will change the reaction to acid, which quickly acts upon the cement substance, dissolving it, and in those who are in poor health, or showing this improper condition of the saliva continuing for an indefinite time the process of dissolution is more rapid and extensive. In such cases creasotum in the potencies, carried by the circulation to the salivary glands restores the normal reaction of the saliva, acting as a systemic antacid if you so choose to call it, and prevents the further destruction of the cement substance, thus preventing caries. To those who are unfamiliar with the theory of homeopathic potentizing, may I state that the division of the molecules of remedies by

that process renders their absorption more prompt and rapid—osmosis being the method—the finer the molecules the quicker it is accomplished. One more remedy should receive attention.

*Silicea*.—Alveolar abscesses are a frequent source of annoyance to dentist and patient alike. Sometimes these cases will present a history of slow development and be found very difficult to properly evacuate and heal up. The pus will be thin and watery. The patient will show signs of low vitality, cold extremities. Perhaps previous attacks have occurred and a fistula has formed with frequent recurrence of swelling and discharge of pus; ulceration of the alveolar process may be present. The usual treatment would be to open the gum, thoroughly expose the diseased surface if possible and scrape it, then apply antiseptics and cause healing by granulation. In these cases try a few doses of *silicea* 30, and giving only free vent to pus will be necessary.

Dentistry has made wonderful advances in the past quarter century, yet if we can prevent an abscess forming by giving a few doses belladonna 6 as soon as it is discovered is it not better than the most skillful surgery? If a few doses of creosotum 30 will prevent extensive caries, is not its administration better than large contour fillings to restore the destroyed tissue?—*Items of Interest, Sept. 1898.*

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**PSYCHOLOGY OF HYPNOTISM.** By Mr. F. N. H. Myers. Read at British Medical Association. The author said he understood what was desired was some attempt at a coherent psychological presentation of the multifarious and perplexing facts now commonly grouped under the name of hypnotism, which facts physiology was not as yet able to explain. If a somewhat closer approach could be made on the psychological side, this must needs be by bringing into comparison a great mass of cognate life-phenomena, such as hysteria, ordinary sleep and somnambulism. The analogies and differences between hypnotism and hysteria were particularly instructive. Both in hypnosis and hysteria there were disaggregations of the personality, at first apparently similar, afterwards seen to be governed by quite different laws. To understand what happened in either case it was convenient to picture to oneself human personality as in a certain sense stratified, part of it lying above and part of it below the threshold of consciousness, the level above which thought or sensation must rise in order that it may

enter into our waking life, or become subject to our voluntary control, or find a place in our chain of memories. Now the characteristic trouble of hysteria was that fragments of faculty, of power, of sensation or motion, which it was desirable to retain above the conscious threshold, were apt to sink down below that threshold and thus become useless to the hysterical patient. For instance, the patient would suffer from hysterical paralysis, say of one leg, or from a diminution of her field of vision, while yet there was no perceptible organic injury to brain or leg or eye. What was thus lost could not be recovered at will, but might nevertheless be suddenly restored for a time or permanently by some shock, as when a hysterical paralytic patient recovered the use of her limbs in the terror of a fire, or was able to discern a terrifying object such as a stuffed mouse when it was brought into that part of her normal field of vision of the use of which hysteria had deprived her.

With the hypnotized subjects, on the other hand, the case was quite different. They were able to recall at will from beneath the threshold any faculty or sensation which they might have lost through hysteria, so that in just the ways in which hysteria could destroy, hypnotism could fulfil, and they were able also to send down beneath the threshold and dismiss from consciousness sensations which they wished to get rid of, even such insistent sensations as the pain of an operation or of childbirth. The next point of great psychological importance was the analogy between hypnotism and sleep. The essential fact of sleep was the shutting off of the supraliminal life—the life concerned with facts above the conscious threshold—and the consequent increase of inward subliminal recuperative power. Hypnotism in the first place made our entry into this regenerative phase of our personality easy and certain. It did more than this, for in hypnotic trance the subliminal plasticity was more marked than in ordinary sleep and the subliminal control intenser, so that hypnosis sometimes seemed to be to sleep what sleep was to waking. Indeed, the leading facts of hypnotism, both for physician and for psychologist, the facts which called most pressingly both for explanation and for development, were those profound sanative regenerations which had now so often transformed the dipsomaniac and the morphinomaniac into self-controlled and useful members of society. But how, after all, was this further control over subliminal plasticity—over the *vis medicatrix naturae*—actu-



ally reached? The consensus of hypnotists now declared that the secret lay in suggestion. But what was suggestion? Did the hypnotizer infuse power or merely evoke it? The speaker believed that in some cases there was actually a transmission of power, of some subliminal power akin to what he termed "telepathy." But in many cases there was manifestly no such transmission; the hypnotizer merely taught the subject to start self-suggestions of his own. What it was that made those self-suggestions effective, that helped him to take hold, no theory could at present tell us. We might learn something by observing prevalent forms of self-suggestion outside the doctor's consulting-room altogether. One of these popular self-suggestions was the fountain of Lourdes, another was so-called Christian science or mind-cure. Both of these took advantage of deep-rooted beliefs, although expressed with a superstition or an extravagance repulsive to the scientific man.—*Lancet*, Aug. 1898.

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WHAT IS THE BEST OPERATION FOR ADENOIDS? The diligent reader of rhinological literature can hardly have failed to notice that for the removal of the masses of lymphoid tissue in the naso-pharynx, commonly termed "adenoids," very different operative procedures are advocated. Galvano-cautery, the cold snare, curetment, forceps, each has its supporters. Some operators seldom use an anesthetic, others invariably do. The position of the patient is as various as the operative features, some surgeons preferring the sitting posture, others what might be termed the recumbent semi-prone, and others again to have the vertex dependent, etc.

The use of Gottstein's curet as the main dependence appears to prevail as against the use of cutting forceps, though many operators combine their use. Dependence upon the curet alone appears to be irrational, and in fact has been deceptive in its results by reason of the structure of the lymphoid growths. The lymphoid portions of these are held together and attached to the vault by fibrous and vascular tissue, forming sessile pedicles and septa, a sort of placenta, varying much in its extent and firmness. Now, when this fibrous tissue prevails and the growth is therefore termed "tough" and fibrous, it is not reasonable to expect that an instrument like Gottstein's forceps, which scrapes rather than cuts the growth, will thoroughly remove it. A small, strong, sharp forefinger-nail, such as is possessed by some surgeons, is eminently superior to Gottstein's



instrument, especially in curreting out the narrow recesses on the wall of the space anterior to the Eustachian prominences and at the entrance of the choanæ, yet it is well known that the portions of fibrous pedicle and lymphoid tissue left after its use often lead to a return of the growth. These cannot be thoroughly removed by even a very strong finger-nail, much less by a curet scraping over the surface. Some form of cutting forceps is necessary. Such forceps undoubtedly require more care and skill for their use than the curet, but skill, care and deliberation are far more necessary for the proper performance of the operation than is generally supposed.

With many operators ignorance is bliss, for after a hasty operation with the curet, during which the phenomenal hemorrhage encourages them to believe that they have been heroically thorough, they fail to explore the cavity a week or two later, and to discover that close to the choanæ a considerable mass yet blocks the way and nasal breathing is still obstructed.

Haste in operating is mainly due to the very free hemorrhage and its menace to respiration. Hence it appears wise to place the patient semi-prone with the head sufficiently dependent, and to proceed quickly but without haste. This of course necessitates complete anesthesia, and sufficiently profound to insure the quietness of the patient, say from five to eight minutes, during which time the finger-nail and curet can be rapidly used, to be followed by the proper cutting forceps guided along the left forefinger, which (surgeon on the right of the patient) hooks forward the soft palate and constantly touches the sharp edge of the vomer.

The only fairly practicable way of telling whether all the vegetations have been removed is by palpation, and this must be carefully done or otherwise portions will escape detection. There appears at present to be too much stress laid upon rapidity of operating and brief anesthesia, and too little upon the difficulties and dangers attendant upon the complete removal of some of these growths. No matter how complete the operation appears to have been, a careful examination of the naso-pharynx should invariably be made a week or two afterwards.—*The Laryngoscope*, June, 1898.

TO CLEAN RUSTY INSTRUMENTS.—Fill a suitable vessel with saturated solution of stannous chlorid (chlorid of tin) in distilled water. Immerse the rusty instruments and let them remain over night. Rub dry with chamois after rinsing in running water, and they will be of a bright silvery whiteness.

## Letters.

### LETTER FROM THE SOUTH.

ATLANTA, GA., October 17, 1898.

*To the Editor of the Dental Digest,*

DEAR DOCTOR: The somewhat provincial flavor of our environment will necessarily circumscribe the efforts of a regular correspondent, and we must therefore be indulged the liberty of discussing questions of the day irrespective of latitude or longitude.

Our first observation is that dentistry is just now passing through a history-making epoch. Within the last twelve months the contributions to what is destined to become permanent literature have not been equaled in point of number and superior excellence in the same period of time since the first text-book made its appearance. Black, Kirk, Marshall, Barrett, Thompson and Burchard have contributed the greater portion of this literature and are justly the recipients of the plaudits of an appreciative constituency.

In this day of isms and fads it is a hopeful sign of genuine progression when men of this calibre ignore all set forms and precedents and blaze out a path of their own. The only discordant note we would sound in this connection is one of surprise and regret that southern men are conspicuous by their absence from the list of authorship.

During recent years the profession has passed through the cocain, Herbst, copper amalgam, antiseptic and cataphoric epidemics, respectively, and is on the eve of wrestling with still another problem, the ultimate solution of which, however, gives promise of results far exceeding in value and prominence those enumerated above. Indeed, we shall be greatly surprised and chagrined if Dr. Jenkins' recent exhaustive experiments in inlay work fail to prove the crowning achievement of the century, for such it would be.

In the event of such a glorious consummation, what a deadly blow it would be to the advertising gold builders; and yet, since "the world is still deceived with ornament," the so-called ethical will have many opportunities to display their wares duly embossed with their monograms.

What has current dental literature to do with the application of a questionable theology to everyday practice? Nothing whatever, yet

it has shown its teeth in certain quarters, and unless summarily suppressed will prove a disagreeable, not to say dangerous theory. The profession is full of cranks already, but should this new craze seize hold of them, its poisonous breath would soon blight the very foundation principles which have been crystallizing for nearly a century. If the impression once obtains among the laity that the dental profession has embraced the Christian Science idea as a panacea for all pain, it at once invites ridicule. The work of years is destroyed in a day.

Isms, especially those of a religious character, are very insidious and usually attractive in form, and for this reason, if for no other, should not be seriously discussed in respectable dental journals whose clientele have shown in late years a ravenous tendency to delve into the intangible and mysterious.

Shakespeare, with a marvelously prophetic vision, very properly characterized these latter-day isms and their proclaimers when he said,

"In religion,  
What damned error but some sober brow  
Will bless it and approve it with a text,  
Hiding the grossness with fair ornament?  
There is no vice so simple but assumes  
Some mark of virtue on its outward parts."

Yours cordially, JUNIUS, JR.

### NEW JERSEY LETTER.

*To the Editor of The Digest,* NEWARK, October 19, 1898.

MR. EDITOR:—The summer has passed; vacations are ended, and the business-end of the average New Jersey hornet has begun to act, and that too with no uncertain sound or wavering tendency.

The Central Dental Association held its first meeting of the winter last Monday. In the afternoon a clinic was given by Dr. Ottolengui on porcelain inlays, using the new Jenkins' furnace and bodies. An excellent operation was performed, to the satisfaction of all who witnessed it. In the evening Dr. Ottolengui read a paper on the same subject and explained in detail the method of manipulation. It was very interesting and profitable and a most decided advance in porcelain art.

Too much prominence cannot be given this subject, nor too much

written and spoken about it. It is more important that excellence in this art be developed, as those on the other side of the big pond are beginning to study it with earnestness, and we cannot afford to be behind them in this matter, since we are not in any other branch of dental art. Furthermore, our people are calling more and more for something to replace the unsightliness of gold, and we are in duty bound to give them any substitute which approaches nature's work.

Dr. Head of Philadelphia also referred to a system and method of porcelain work which he has been developing, and we wait with much interest to hear what he may have to say about it, and hope his paper may not be long deferred.

About one hundred members and guests were present at the banquet, and the menu was made up in honor of the various states which sent delegates from their examining boards to the meeting. We therefore had "Chicken Gumbo—Alabama Style"; "Connecticut Spinach"; "National Association Cigarettes"; "Maryland Lobster"; "Roquefort a la Georgia," etc.

The meeting was a decided success, more especially as a number of delegates from the sessions of the National Association of Dental Examiners in Washington came up to be present as guests of our society. We understand they are to visit the New Jersey Board in their examinations this week at Elizabeth. Have heard nothing about it, but feel sure they will not be allowed to depart without another example of Jersey hospitality in the shape of a special banquet.

Dr. Riley, president of the C. D. A., in his opening speech to the members and guests mentioned his visit to Washington to attend the meeting of the N. A. D. E. He spoke of the large number of delegates present and their interest in the work; the large amount of labor bestowed by the committee on colleges; the prominent part taken by the New Jersey Board on all the work; the fact that the work was tremendous in amount and possessing much value to the profession; and that this would be more appreciated in the future than at the present, as it would be viewed in the light of history and of undivided opinion and preference.

A number of colleges have since the last meeting come up to the required standard for admission into the Association. The meeting next year will be held at Niagara Falls, before the meeting of the National Dental Association.

Great indignation has been aroused in the state society by the action of a certain dentrifice company for obtaining the report of one of the state committees, which had mention of this company's preparation, and publishing the same. A large special meeting of the society has been held, a prominent Newark lawyer retained as counsel, and a temporary injunction obtained to prevent the company from publishing or in any way using the report of the committee. A decision has not yet been rendered upon the permanent injunction, and will not be for two weeks, but it is not thought that it will be refused, as the vice-chancellor immediately granted a temporary one upon hearing the facts as presented by our counsel.

Yours fraternally,

HORNET.

### NEW YORK LETTER.

*To the Editor of the Digest,*

NEW YORK, Oct. 22, 1898.

MR. EDITOR:—To take the day boat to Newburg and be out on the Hudson these autumn days is something to be greatly appreciated, and this trip includes nearly all the magnificent river and mountain scenery. We followed this course and met with the Second District Society of New York city. The members are composed of dentists from Brooklyn, Long Island and some five other counties. There was a good attendance from Brooklyn, but the New York men who were prominent in the organization of this body, in '64 we think, were noticeably absent. For this season the society seems to have been left in the hands of the younger men, with two notable exceptions, Drs. Straw and Allen. The former is a genial veteran, and when we congratulated him on growing old so gracefully and retaining his magnificent set of teeth, he informed us that he was the youngest man present. Dr. Allen is a successful practitioner, socially and otherwise, and has devised many useful articles in connection with our practice.

The season of societies is now open and we shall doubtless soon be made acquainted with their purpose of action. We forgot to mention that formaldehyd had an airing before the Second District, but the two discussing the question absolutely disagreed. Dr. George Weld gave an unusually intelligent exposition of his method, and it seems to be coming more into favor.

Nothing seems to daunt the attempts of science to ameliorate the ills which human flesh is heir to. As an example we will briefly

describe an operation which was performed the early part of this month at Passaic, N. J. It is the first of its kind in this country and the eighth in the world. A young man fell from the window of his hotel and crashed through a glass skylight. The only serious injury was that a large piece of the calf of one of his legs was torn completely away by the glass. Preparations were made to amputate the leg, owing to the great danger of lock-jaw, but as the wound began to heal nicely the operation was not performed. The danger of tetanus seemed over, but a few days later it suddenly developed. Tetanus antitoxin serum was injected into the body, but proved ineffectual and the jaws remained firmly set. Despairing of the young man's life the surgeons adopted heroic measures. The skull was trepanned on both sides, so as to expose both lobes of the brain, and the antitoxin was then directly injected into the brain tissue. Almost immediately there was a noticeable relaxation of the muscles and the improvement has since been steady. The patient is now able to masticate food in small quantities and his recovery seems almost certain.

Unexpectedly we were invited to attend the Northeastern Dental Association meeting at Hartford and it proved a very enjoyable gathering. There were about two hundred in attendance and we must say that we have never been at a better managed meeting. The most fraternal spirit was manifested; there were good papers, full and intelligent discussion of all subjects, and excellent clinics. We mention only one paper, although nearly all were excellent, Dr. D. D. Smith of Philadelphia, in a paper on Prophylaxis, particularly emphasized the polishing of teeth, beginning with the deciduous ones. Few men have any idea of the value of this practice and if tried it would be a revelation to them.

Dr. Strang of Bridgeport, Conn., was chosen to preside for the coming year and will do honor to the office. An example worthy of a large following is the quiet manner of electing officers by a nominating committee and a single vote of the Society as a confirmation. We congratulate the executive committee which was able to carry out so good a program so harmoniously.

The Odontological Society has held its opening meeting and clinic. Dr. George Evans gave a talk and demonstration of his method of placing anterior crowns so as to avoid any conspicuousness. The subject of the evening was "Conspicuousness of Gold

Crowns and Fillings," growing so common in these days and more particularly true of gold crowns. The people will have them however, and men will furnish them for so much apiece. What can we do? Legislation does not stop it. Cordially, NEW YORK.

### BALTIMORE LETTER.

*Dear Digest:*

BALTIMORE, October 17, 1898.

Man is born to trouble as the sparks to fly upward! How true this saying is, and if true of man, how much more so of birds. One might wonder why orioles are not so plentiful as black-birds; but to judge from this one's experience they never will be.

The mutterings of resentment for his discordant notes, and the threats of punishment of a most disagreeable character, all make him think that he is in danger of being shot on sight, or shut up in a horrid cage. When will folks get used to an oriole's song, and why will they object to his nest being closed at the top? The nest is constructed for protection and concealment; he tries his discordant note to increase his range of voice. Who knows but that he may learn in time to sing in the clear, sweet notes of the canary, and then decide to build his home on the sand as does the whippoorwill. Friends, put up with Oriole yet a little longer—let him live, he may be a better bird.

Last month Oriole called the Washington society sharply to task for dropping a patriarch from their honorary roll, and as a consequence Washington to a man is up in arms and all gunning for Oriole. They'll surely get him, some of them; Oriole is frightened and oh! how sorry. He had no idea those Washingtonians were so sensitive, or such clever and crafty huntsmen. DIGEST, please hide this bird till he has time to make peace. He is convinced that according to a strict interpretation of the code, the Washingtonians had ample ground for their action, and they were unjustly called vandals.

The mournful and distressing exhibition of proofs forces us so to conclude. Washington had grounds; her action is supported by the law, and the culprit of eighty-seven years has been punished. No matter that his recollection of the travail and early struggles of our profession might be interesting. No matter that his voice has hitherto been raised in professional counsel in condemnation of the course that now, in his second childhood, has



been the cause of his downfall. No matter that his professional brethren saw fit some years ago to honor him with a patriarch's dinner. No matter that poverty and misfortune have crowded fast and furiously upon him in his declining years, and in the hour of temptation and weakness he yielded; he joined the ranks of that great and iniquitous army, whose tramp can be heard in crowded thoroughfare and busy mart, whose flaming banners catch the eye of the passer-by and cry to all for *trade*. Would to God that like the stalwart giant he is physically, his professional spirit might have weathered the storms of adversity, and his long and honorable career might have stood like the great oak, a refuge and a source of pleasure, happiness and inspiration to those who passed that way. But alas! prone he lies. The first stone is cast, and all save one with one accord cast stones. That lonesome man held the garments of the others and now wishes he had shied a few stones himself.

This painful duty over, let's look to ourselves; burn up the stock which has been presented to us in the patent nostrum company; trim down our descriptive cards; remove our plates from the hotel registers, and live like peaceful servants of the Lord whose work is a labor of love.

Speaking of trees, they have always interested us, even if they do not obey the laws of conventionality and grow with symmetry and uniformity. We once forced a little pebble into a slit made with a pocket-knife in a chestnut tree, and years afterwards saw a great gnarled piece the size of our hand as the result. If trees are thus sensitive to obstruction, who can say they should not assume manifold shapes and expressions. 'Tis so of men. What influences change their lives and character? Who but like to see portrayed in their work individual traits and peculiarities?

Have you read Bonwill's letter in the *International*? How like him it is. He isn't afraid nor abashed, though all Europe stare at him. When he passes away we shall all remember him as a proud, haughty, self-opinionated, interesting and clever man. For our part he is welcome to all his self-esteem, for we right heartily esteem him ourselves. There is only one, there never will be another; can't control him, can't lick him; he sometimes seems impossible; he's just Bonwill and he's done lots for dentistry. May he live long to enjoy the reward of his labors.

We are proud to hear that New Jersey will come out from under

her cloud at the National next year; we never thought she was guilty as charged in the indictment. Her men have done too much good in a professional way to have their reputation smirched, and they won't stand it. The Hornets are beginning to buzz and their stingers are being sharpened, so look out for them.

Our local board of examiners are attending the national meeting this week in Washington. The colleges are in full blast, and the rest of the dentists are digging for a living.

Cordially,

ORIOLE.

### PHILADELPHIA LETTER.

*Dear Digest:*

PHILADELPHIA, October 20, 1898.

Philadelphia has long been recognized as the center of professional education, not only owing to the excellent history of our many educational institutions, but from the fact that hundreds, indeed thousands of men and women come to this city every year for education in some of the learned professions. Our dental colleges are now open and in operation for another season and the matriculates in these schools alone number over twelve hundred. The population of this city of brotherly love is therefore increased during the college terms by a cosmopolitan student element numbering several thousand.

For a number of years a marked interest has been shown by the public in the personal welfare of these temporary residents. In fact, students are here treated royally. They are given receptions and teas, are furnished with wholesome reading matter, special invitations are extended to them from most of the churches, and many privileges offered to make their social life as well as their college training of lasting benefit.

Not least among the features of student life in Philadelphia is the intercollegiate branch of the Young Men's Christian Association. This work has grown to be of such importance to the young men that a branch has been established in every professional school in the city. One of the most interesting meetings of the season is the public reception tendered the students each autumn, at the auditorium of the Y. M. C. A. building. This large hall being divided into sections, each college is assigned to one sufficiently large to seat its respective students; after which each section is draped in the several college colors. At an appointed time the students from each college march in a body to the hall, and here they vie with

each other in college yells, etc. Some public official usually presides at the meeting and for the city offers the boys a hearty welcome. The program of the evening is made up of short speeches from members of the faculties of all the institutions represented. These meetings are always a great success. We accepted an invitation to be present this year and feel that it is a most excellent work, this bringing the students, teachers and public together in a social way.

At the reception held a few nights ago Ex Governor Beaver presided and was an admirable chairman. Short talks were given by some representative of each college, as stated, and notable among them were our Professors Peirce and Guilford. General Beaver showed his never failing interest in young men by coming from Washington (where he is serving on the investigating board appointed by President McKinley) to preside at this reception and talk to the boys, and the women too, for the Women's Medical College was out in full force, and one of their faculty, a woman, spoke from the platform.

Knowing that the DIGEST reaches many teachers and students throughout the country, we speak of this that they may know some of the reasons why students always carry away a warm place in their hearts for Philadelphia and Philadelphians.

Some time ago we spoke of the admirable address of Prof. Wilbur F. Litch before the Penna. State Dental Society. We have recently received a printed copy of this essay and have found renewed pleasure in its perusal. It is a pity our profession has so few men with such a thorough mental equipment as Prof. Litch.

In speaking of commercialism he says, very truly, the fact cannot be ignored that our professional good fame is being seriously threatened by the gross commercialism which characterizes certain phases of dental practice. The advertising dentist, the doctor adds, was never more in evidence than to-day, and his violations, not only of professional propriety but of common decency, never more audacious, persistent and shameless. Dr. Litch makes a plea for some form of legislation by which disreputable men can be stopped from practicing, as the courts debar a man who cheats his clients. It is certainly a scandal upon the profession which cannot be accepted with indifference.

It is said that when Dr. Bonwill sets the wheels in motion the

cogs never get clogged, and it is only by some friend rushing to his aid that he can stop. Did you read his "Reminiscense" in the current *International*? We thought it very lengthy, even for Bonwill, as we read page after page, but behold, as we come to the close of the last page it says 'to be continued.'

On Saturday evening of this week Dr. H. C. Register, one of the most highly respected dentists of the Quaker City, entertains the Philadelphia "Dental Club," with some personal friends, in his palatial home at Ardmore, Pa. It goes without saying that every one will have a thoroughly good time, for as an entertainer Dr. Register excels. Cordially, THE SPECTATOR.

### BOSTON LETTER.

*To the Editor of the Digest,*

BOSTON, Oct. 21, 1898.

DEAR DOCTOR:—Since returning from the National Dental Association meeting recently held at Omaha, we have been more strongly impressed with the importance of more members of our state organizations being sent as delegates to the National, and thereby becoming permanently identified with the latter association. We earnestly hope that the Massachusetts Society will send delegates to the next meeting.

No doubt the intense heat at Omaha had much to do with the flatness of the meeting, but only a few good papers were produced, and after so long a journey across the continent the best of material should have been presented. Routine business in future should be disposed of at the close of each day and not at the beginning, thus enabling papers to be read and thoroughly discussed. Let us hope that the selection of that world-famed and healthful spot, Niagara Falls, may increase the attendance at the next meeting, especially from New England; and with the new and young president, who resides in that district, to inject new energy and life into the convention, we may in confidence expect a rousing meeting which shall start this organization well upon the highway of success and future usefulness.

A word relative to the Dental Protective Association may be of interest. In our efforts during the past two or three years to induce dentists to join, we find that ninety per cent take refuge behind the excuse that "it is not necessary," as they get the protection without expense or liability. They are not abashed by the argument that

such is a selfish way of looking at it, for like the trusts and combinations in commercial lines, so long as they get all the benefits, what care they about others. Since the members have been and are receiving protection against fraud and imposition, it seems about time that the association form a trust for its own protection against non-members by not granting protection to them.

The Harvard Dental School has opened with sixty freshmen and fifty each in junior and senior classes, an increase of about twenty per cent in total over last year.

We learn that the Boston Dental College has sixty-five students in the freshman class for the coming season. This school was disciplined by the Faculties' Association at the recent meeting for suspension of dissection in the curriculum, and we learn that the faculty have made arrangements with Tufts' College Medical School to receive the Boston students as specials in dissection.

We are sorry the proceedings of the last meeting of the Massachusetts Dental Society have been so long delayed, and that you have been unable to secure them for publication. The stenographer who took the proceedings was taken suddenly ill soon after the meeting and has been in the hospital ever since. He is now convalescent however, and will soon be able to transcribe his notes.

The Harvard Odontological Society at its regular monthly dinner discussed a paper by Geo. F. Grant, D.M.D., on "Manipulation of Phosphate Fillings." The author referred to the fact that a phosphate filling should be rapidly manipulated and packed quickly, and when thoroughly condensed into the cavity and given a polish with a smooth burnisher, he considers it reasonably safe in its efficiency. Dr. E. H. Smith always uses the matrix at the cervical margin when using any cement, but most of those discussing the paper used gutta-percha at the cervix in all cases for cement fillings.

A man bled to death recently in New York after having several teeth extracted, and physicians are puzzling their brains over the case. They do not seem to be aware that there is a certain class known as "bleeders" who have serious and frequently fatal hemorrhages after extraction of teeth.

On the 19th and 20th of this month the Northeastern Dental Association held its fourth annual meeting at Hartford, Conn. This body is the outcome of the union of the New England Dental Soci-

ety and the Connecticut Valley Dental Society, both of which had been in existence for about thirty years. The meeting was very successful as regards attendance, papers, clinics and exhibits. the latter feature being the largest in the history of the society. Only two dentists were present from Boston, and this is a shame to the profession which claims to be active in the pursuit of knowledge and to take an interest in society matters. Men came from all over New England and New York, more from greater distances being present than from near and accessible towns and states. Every paper was read by the author himself, and almost every clinic given. The venerable Dr. Palmer of Syracuse, N. Y., was present and contributed an interesting essay. Resolutions were passed approving of the efforts to bring about a uniformity of dental laws throughout the United States. The following officers were elected for the ensuing year: Dr. C. W. Strang, President; G. F. Harwood, Vice-President; A. J. Cutting, 2d Vice-President; E. O. Kinsman, Secretary; F. M. Wetherbee, Asst. Secretary; J. T. Barker, Treasurer; F. T. Murlless, Jr., Librarian; Chas. McManus, Editor.

Fraternally,

BOSTON.

TO REMOVE A FOREIGN BODY FROM UNDER THE NAIL.—Alternately soften the nail with the end of a match dipped in caustic potash and scrape with a piece of glass until the object is reached.—*Journal de Med. de Paris, July 3.*

INCUBATION OF INFECTIOUS DISEASES.—It is so important for the general practitioner that he should be prepared at a moment's notice to state the usual period of incubation of the specific infectious diseases, that the following table may be found of service. It is based on the exhaustive investigation of the committee appointed by the Clinical Society. For all practical purposes these diseases may be divided into two groups, viz., those having a long period of incubation and those with a short one.

In the following table is given, in days, the usual, the shortest, and the longest period of incubation:

I—THE LONG GROUP.	Usual.	Shortest.	Longest.
Mumps . . . . .	21	14	25
German Measles . . . . .	18	5	21
Enteric Fever . . . . .	12 to 14	5	23
Typhus . . . . .	12 to 14	2	21
Varicella . . . . .	14	13	19
Variola . . . . .	12	9	15
Measles . . . . .	10	4	14
II—THE SHORT GROUP.			
Scarlet Fever . . . . .	1 to 3	Less than 1	8
Erysipelas . . . . .	1 to 4	" "	?
Diphtheria . . . . .	2 to 4	Few hours.	7
Influenza . . . . .	3 or 4	One day.	4 or 5

# The Dental Digest.

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## Editorial.

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### . MORE LIGHT REQUESTED—AND FURNISHED.

"The second feature of importance was the action of the executive committee relative to the proposed patent-law amendment making impossible the issuance of patents upon methods of treating human diseases. The resolution embodying the views of the executive committee with respect to that movement is a curiously worded statement which seems to need further elucidation, for the reason that it does not make clear the fact that the alleged decision of the supreme court declaring all such patents invalid will also and necessarily prevent the patent office from issuing them, and so make an end to litigation concerning them, nor does the wording of the resolution make it clear that the committee intended that the interests of the dental profession took precedence in their minds over 'the interests of organizations now in existence,' but vice versa. A little more light on the real motives of the executive committee in this regard would be welcomed in view of the importance of the principles at stake."—*From editorial in the October Dental Cosmos.*

We would respectfully refer the editor of the *Cosmos* to the March, 1898, number of the DENTAL DIGEST, wherein we explained this whole question quite fully and so will not enter into it here.

If in discussing the future work of the Dental Protective Association we were surrounded only by its friends and the friends of the dental profession, nothing would please us more than to give all the plans. Many things cannot be published to the world for the present, however, because surrounding and mingling with the profession are numerous spies and hired servants of those who bitterly oppose any effort to band the dentists together, and to earn their salaries the above mentioned persons are required to do everything possible to injure the work we are doing, and they resort to many vicious and slanderous methods. Many of these enemies of reform hold such prominent positions that we are compelled to keep back much that the true friends of the dental profession should know.

Suffice it to say that the National Dental Association took just such action as all societies should take, and would have taken had they been



familiar with all the facts. Agitation of this question has been very detrimental to the Dental Protective Association, and this alone should be sufficient reason for dropping the question, since this organization is run solely for the benefit of the entire profession, and an organization which has already done so much good and for which there is so much yet to be done, should not be handicapped in any way. Especially not by a movement which is already superseded by court decisions, and is therefore unnecessary. This fact alone will prevent any possibility of Congress passing the proposed bill, and even granting, for the sake of argument, that Congress did pass it, this would not prevent the issuance of illegal patents, covering the same devices but in a different form, just as the S. S. White Dental Manufacturing Company has for years obtained patents in various forms on sham and trivial claims that would not be worth the paper that they were written upon if a test were made of their validity, and by such monopoly has accumulated vast sums of money at the expense of the dental profession.

Another very important reason why the National Association and all honest dentists should be opposed to such legislation is because, as we are informed by the accredited author of this patent-law amendment, the S. S. White Dental Manufacturing Company favors it. This fact alone should be sufficient to create universal opposition to the movement, for this company has never shown any particular love for the dental profession or desire to better its condition in any way, and judging of its past patent monopoly transactions, any change in the future laws which is favored by it would not be for the benefit of the dentists.

Suppose the correspondent of the New York State Dental Society, who as we stated before is the supposed author of this patent-law amendment, had introduced a bill making it unlawful for any one to take out patents or to purchase them with no other object than to lay the devices on which such patents were granted on the shelf, and thus prevent others from making use of the same, thereby depriving the profession of the benefit of the devices as well as the natural competition to which they are entitled. We wonder what the attitude of the S. S. White Company would have been toward such a movement. This is an abuse which is not composed of sentiment, and one which the dental profession have submitted to for many years. Why not take up a much needed reform?

## WHO WAS TO BLAME?

"It is a matter of regret to many who are interested in the success of our new National Association that its first meeting was held under circumstances which necessarily detracted much from its success. It is further a matter of surprise that the results accomplished were as satisfactory, considering the adverse influences which hedged it about both at the time of the meeting and for some time previous thereto.

"It was not until a very short time before the date fixed for the meeting that the place where it was to be held was definitely decided upon, and pending that decision all sorts of rumors gained currency as to the availability of the place finally selected. Its geographical location, its hotel accommodations, its climatic conditions, etc., were all called in question, and created a widely-felt uncertainty as to the desirability of Omaha as a meeting place. These doubts certainly deterred many from undertaking a trip which involved a considerable financial outlay and an amount of fatigue and inconvenience which few care to assume during the summer vacation period unless a compensating inducement in the way of a pleasant and profitable gathering is offered.

"Someone blundered in the management which permitted the foregoing state of affairs to occur. It was not until the August issues of the dental journals had appeared that the official decision as to the place of meeting was announced, or until official assurance was given that delegates and visitors would be properly provided for during the time of the meeting. Nor was sufficient notice given of the character of the program provided, as the official document was issued only at the last moment. As a result, the attendance was small, lamentably so in comparison with what it should have been under proper management, to the lack of which and nothing else the meager result is to be charged. If a proper place of meeting is selected, a good program provided and ample notification given as to all its details, a good attendance will result. Dentists will not barter the certainty of a much needed rest and vacation after a season of arduous labor for an uncertainty in the matter of a dental meeting to which they are invited long after the disposition of their vacation time has been provided for, and especially when the inducements offered by the dental meeting are discounted by the possibility of much personal discomfort and expense. Right here it is customary to offer sentiments of professional duty as the warrant for sacrifices of that character, but professional duty involves also the duty of maintaining one's physical and mental standards by a proper summer vacation. Therefore, if the summer gathering of our national body is to be a success, it must not be made an arduous task, but a pleasure and means of recuperation to those who attend."

—*Extract from editorial in October Dental Cosmos.*

Let us see who was to blame. Omaha was selected as the place of meeting by ballot, according to the rules of the Association, at the previous meeting in 1897 by an overwhelming majority, and could not be changed by the executive committee. What did this committee do to insure a successful meeting? A notice of the time and place of convening was published in all the journals early in the spring. Application for reduced railroad rates was made about the same time, several months before the traffic associations would consider it. A long time in advance of the meeting letters were written to the officers of the various sections, urging their activity in regard to the literary program.

Early in the season some of the officers of the Faculties' Association, while visiting the Omaha Exposition, applied to the hotels for rates for their meeting and were refused, the hotels having agreed among themselves not to make rates until they were sure what the attendance would be at the Exposition. Alarmed at their attitude the gentlemen above mentioned asked us to change the place of meeting, urging the lack of accommodations.

Several members of the executive committee were at the Put-in-Bay meeting in June, and after talking the matter over it was thought best for the chairman to go to Omaha and find out the true state of affairs. We therefore took this trip at a great sacrifice of time, made all the arrangements, including a good place in which to hold the meetings, examined the hotels and secured a written contract with four of the best for reasonable rates. Soon after our return a circular was sent each member of the Association and the delegates so far as known, that satisfactory arrangements had been made and that the railroads and hotels had given reduced rates.

The great mass of petty details have been omitted, but some idea can be gotten of what work the chairman of the executive committee did, and much of this labor has been necessary each year for the last twenty-five. We would ask our readers to contrast it with what the editor of the *Cosmos* has ever done for his profession? Yet he sits in his easy-chair in the luxurious office thoughtfully furnished by his employers, the S. S. White Co., and fifteen hundred miles from the place of meeting criticizes the honest work of those who are keeping the Association alive.

There is an important consideration which should properly be discussed in this connection, viz., that the individual who is always

striving to benefit those around him rarely grows tired or needs relaxation, for he gets his rest and recreation out of life and the good he is doing. On the other hand, the human being who does nothing to help his fellow creatures robs his soul of its natural nourishment and it becomes dwarfed. Because of this starvation of the soul, the brain and body grow out of proportion and the physical economy demands more rest. When it comes to any self-sacrifice, such a person usually feels tired and begins to study "the duty of maintaining one's physical and mental standards by a proper summer vacation."

Accrediting the editor of the *Cosmos* with the good sense and sound judgment we are sure he possesses, were he only allowed to exercise them, we fail to see the logic of his criticisms, for he must have known that the place of meeting was fixed by a vote of the Association one year before; that the rumors which received the wide circulation he speaks of were not started by officers; that the executive committee does not make up nor prepare the literature of the National Dental Association; that the program issued is simply a guide for the business part of the sessions, sometimes not being printed until approved by vote of the Association after first session; and that the officers had nothing to do with the weather.

Our fastidious members could have been taken to the meeting in a refrigerator car and kept in it while at Omaha, if their presence would have added sufficient interest to the meeting and they had shown any desire to attend. From the fact, however, that when the meetings have been held in the most convenient places, and the editor of the *Cosmos* has been on the ground he did not show interest enough to attend any of the sessions, probably because his vacation had been previously provided for, it does not seem necessary to plan a cool place for such members of our profession.

It may be urged that it is each individual's privilege to act his own pleasure in attending these meetings or not, and that we should not criticize those who do not present themselves. In reply to this, we believe that each member of a profession owes that profession a reasonable amount of sacrifice for its advancement, and until the editor of the *Cosmos* shows more disposition to do something towards furthering the interests of the National Association, would it not be well for him to refrain from criticising what he knows to be the honest and earnest work of others.

## Notices.

### OHIO STATE DENTAL SOCIETY.

The annual meeting of the Ohio State Dental Society will be held this year in Columbus, Dec. 6-8. A good program is in course of preparation and a profitable meeting is assured. The profession are cordially invited to be present.

### NORTHERN ILLINOIS DENTAL SOCIETY.

At the recent session of the Northern Illinois Dental Society, held at Rockford, the following officers were elected: President, Dr. C. W. Cox, Batavia; Vice-President, Dr. C. B. Dillon, Sterling; Secretary, Dr. J. W. Cormany, Mt. Carroll; Treasurer, Dr. M. R. Harned, Rockford.

### VIRGINIA TIDEWATER DENTAL ASSOCIATION.

A permanent organization of the above association has been effected at Norfolk, and the following officers elected: President, Dr. J. N. Webster, Norfolk; Vice-President, Dr. H. W. Campbell, Suffolk; Secretary and Treasurer, Dr. W. M. Sturgis, Norfolk. The meetings will be held the first Monday in each month.

### MASSACHUSETTS BOARD OF DENTAL REGISTRATION.

A meeting of the Massachusetts Board of Registration in Dentistry, for the examination of candidates, will be held in Boston, December 5, 1898, at 10 a. m., at Harvard Dental Infirmary, North Grove street. All applications, together with fee of \$20 00, must be filed with the secretary of the board before November 28.

DR. G. E. MITCHELL, Sec'y.

25 Merrimac st., Haverhill, Mass.

### ROCHESTER DENTAL SOCIETY.

Following is the program of the Rochester Dental Society for the session of 1898-99: Dr. F. W. Proseus, "Correlation of Fees in Dental Operations" Dr. W. A. Windell, "The Education of the Patient." Dr. F. French, "History of Dentistry in Rochester." Dr. J. H. Beebee, "Cement Fillings." Dr. R. H. Hofheinz, "Treatment and Preparation of Teeth for Filling." Dr. F. M. Rood, "Method of Treating Septic Teeth." Dr. F. Messerschmitt, "Systemic Treatment in Dentistry." Dr. F. H. Lee, "Prosthetic Dentistry." Dr. F. J. Tarrant, "The Year's Advancement in Dentistry."

### TRISTATE DENTAL ASSOCIATION.

The dentists of Indiana, Kentucky and Illinois met in Carmi, Ill., Oct. 24, and organized the Tristate Dental Association. The following officers were elected: President, C. M. Meade, Carmi, Ill.; Vice-Presidents, S. F. Gilmore, Princeton, Ind., Lloyd King, Henderson, Ky., W. C. Brosman, Albion, Ill.;

Secretary, R. H. Burke, Shawneetown, Ill.; Treasurer, Alvin J. Hovey, Mount Vernon, Ind.; Purchasing Agent, M. M. Haas, Evansville, Ind.; Editor, F. J. Raymond, Evansville, Ind.; Executive Committee, C. Chandler George, Evansville, Ind. The association held two sessions to-day and listened to interesting papers. Evansville, Ind., was chosen as the place for the next meeting.

#### LATEST DENTAL PATENTS.

- 11,696. Reissue, dental spittoon, Frank Hurlburt, assignor to A. C. Clark, Chicago.
- 610,518. Mouth and throat mirror, Henry Bausch, assignor to Bausch & Lomb Optical Company, Rochester, N. Y.
- 610,717. Inhaler, James M. Munyon, Philadelphia, Pa.
- 610,775. Tooth-powder receptacle, Wm. S. Thompson, Jr., Woodside, Md.
- 610,840. Dental pliers, Edward H. Angle, St. Louis.
- 610,987. Dental tool, Loren E. Hendrickson, and C. H. Read, assignors to said Read, C. L. Thomas and O. L. Sturtevant, Ogden, Iowa.
- 611,023. Surgical case, Ferdinand A. Reichardt, New York.
- 611,038. Surgical injector clamp, Benjamin H. Lohman, St. Louis.
- 611,185. Rheostat, Charles H. Richardson and L. McMakin, Jr., assignors to S. S. White Dental Manufacturing Company, Philadelphia.
- 611,410. Tooth-powder receptacle, Thomas O. Holland, Philadelphia.
- 611,531. Dental plugger, John W. Tenny and R. T. McCracken, New Orleans.
- 611,670. Rubber-dam clamp, Joseph Wittowski, Berlin, Germany.
- 611,788. Tooth-brush, Isaac N. Lincoln, Providence, R. I.

#### TRADE-MARK.

- 31,962. Powder for cleaning and polishing the teeth, Thomas Hollis, Boston.
- 320,020. Medical preparations destructive of bacteria, Charles Patin, New York.

#### LABEL.

- 6,665. Edward P. Week, Norwalk, Conn., "Dr. Many's Antiseptic tooth-powder," (for tooth-powder.)

### News Summary.

PRACTICING DENTISTRY WITHOUT A LICENSE cost a dental student \$25.00 in Youngstown, O.

DAVID S. LORD, a dentist of Syracuse, N. Y., committed suicide October 11 by inhaling illuminating gas.

DR. A. H. ROBINSON, a dentist who has been in practice in Hutchinson, Kansas, for many years, fell down stairs October 11, and soon after died from his injuries.

DR. GEO. S. GAGNON, who has started several dental parlors throughout the country, has filed a petition in bankruptcy. His liabilities are \$80,000, and his assets \$800.

**DETROIT DENTAL SOCIETY.**—This organization gave its autumn supper October 10, and thirty-five guests, including several dentists from other parts of the state, were present.

**THE DENTAL PRACTITIONER AND ADVERTISER**, which is the third oldest dental journal in existence, and has been published for twenty-nine years at Buffalo, N. Y., has ceased to exist.

**A SNEAK THIEF** has been arrested in Indianapolis. He represented himself as an agent for dental supplies, and whenever the dentist left the room he would help himself to everything in sight.

**PRIZE FOR CLEAN TEETH.**—A man in Maine, it is said, has offered a number of small prizes to the school children in his town who take the best care of their teeth during the summer vacation.

**LOSING TEETH.**—Dentists say that women who talk the most lose their teeth soonest. We doubt it. Women who lose their teeth soonest are those who leave them lying around in wash-basins or on window-sills.—*St. Louis Humorist*.

**DR. BERNARD HERZ**, a dentist of Philadelphia, was struck by a locomotive and instantly killed October 18. He was a graduate of the Pennsylvania College of Dental Surgery, a member of several city clubs and societies, and a very philanthropic man.

**SALT AS AN ANTISEPTIC.**—According to the *Cronica de Ceincias Medicas de Filipinas*, the insurgents dress wounds with dry salt or strong brine, from lack of the usual antiseptics, and wounds from firearms heal under it in four to five days.—*Semana Medica*.

**FOR THE DISINFECTION OF SPONGES.**—Sponges can be boiled without injury in 30 per cent prophylactic alcohol, Saul announces in the *Munich Med. Woch.* of June 14. He boils them two hours the first time; afterward thirty minutes. Anthrax spores are killed in ten.

**FOREIGN BODIES IN THE AIR-PASSAGES.**—Heller reports a number of serious cases in which prompt irrigation of the naso-pharyngeal space produced such efforts at expectorating or coughing, that the foreign body was expelled at once and life saved. He urges all to try this simple measure before resorting to tracheotomy.—*Munich Med. Woch.*, June 28.

**TO NEUTRALIZE NICOTIN.**—A German journal states that after a long search Professor Gerold, of Halle, has found the means of neutralizing the action of nicotin in cigars. During the process of manufacture the leaves of tobacco are steeped in a decoction, the principal element of which is wild marjoram (*Origanum vulgare*.) Gerold claims that by this means the deleterious effects of tobacco are avoided, and yet the quality and aroma are not altered.

**LONGEVITY OF PHYSICIANS.**—A French statistician has discovered that in the sixteenth century the average duration of a doctor's life was only thirty-six and one-half years. In the seventeenth century it reached forty-five and two-thirds years, in the eighteenth century forty-nine and two-thirds years,



and at the present time he finds it is fifty-six years. The same inquirer purposes to ascertain whether the average longevity of patients has increased in the same proportion.—*Toledo Medical and Surgical Reporter*.

**CHAPS AND FISSURES OF THE LIPS**—Professor Hearn uses the following formula and states that when the condition does not readily yield to this treatment, epithelioma should be suspected in those past the middle of life:

R	Hydrarg oxid. flavi,	gr. iv	
	Balsam. Peruvian,	gr. xx	
	Vaselini,	ʒj.	M.

SIG.—Apply to the lips two or three times a day.

**DENTAL LAW VALID.**—The Supreme Court of Indiana October 12 held that the dental law, providing for a state board of dental examiners, is constitutional and valid. Under the decision it is now unlawful for anyone to practice dentistry in the state without obtaining a certificate from the state board of examiners. The Indiana State Dental Association has the power to name examiners and prescribe the qualifications for practice. This suit was brought against Daniel Ferner, who was fined \$20 after having refused to obey the law.

**ALCOHOL AS A DISINFECTANT.**—Recent researches seem to show that absolute alcohol is devoid of all disinfectant properties, whereas proof spirit (50 per cent) gives more tangible results in this direction than either stronger or weaker solutions. Antiseptic substances which, in aqueous solution, are more or less active germicides, entirely lose this property when dissolved in strong alcohol, but, on the other hand, corrosive sublimate, carbolic acid, lysol and thymol, dissolved in a 50 per cent solution of alcohol, disinfect better than aqueous solutions of same strength.—*Med. Press and Circular*.

**REPAIRING A GOLD CROWN.**—By E. A. Randall, D.D.S., N.S. Just suppose you have made a gold crown, and in finishing you go through the shell, making an unsightly hole. If you undertake to solder this the chances are that you will have three or four holes caused by the solder melting out at the joints. To prevent this trouble, paint the crown all over the outside with whiting mixed thin, except around the hole which you wish to repair, fill this with a plug made from gold-foil, touch it up with a drop of borax water, and put a bit of gold solder inside, heat it with blowpipe, and success will be the result.—*Dominion Journal*.

**MERCURY, TO PURIFY.**—Dr. Beacock says hydrochloric acid has no effect on mercury; sulphuric acid must be heated to affect it much; nitric acid acts on it lightly; by taking advantage of this mercury can be purified easily from lead and many other base metals or impurities with which it is often mixed. Using one part acid to eight parts water, heated to 140 F., will not attack the mercury and is sufficiently strong to eat up the baser metals the mercury may contain. Another way to purify mercury is to shake it well in pulverized sugar, then filter through a paper cone by making pin holes in the bottom of it. The mercury will filter through, leaving the sugar in the paper.

**EX-CONVICTS CANNOT BE PHYSICIANS.**—The United States Supreme Court, April 18, 1898, affirmed the constitutionality of the act of the New York Legislature of 1895 prohibiting persons who have been convicted of and punished for a crime from practicing medicine in the state, the opinion being delivered by Justice Brewer. The question arose in the case of a man named Walker, who had served ten years in a penitentiary for an offense committed in 1878, and after his release set up as a physician. The court held that it was within the police power of the state to enact such a law. Justice Harlan delivered a dissenting opinion, saying the law in effect added to the man's punishment and was ex-post facto.

**ALCOHOL AND THE RUSSIAN DEATH RATE.**—An official inquiry into the comparatively larger increase in the Tartar population of the city and government of Kazan has, according to the *Kamsko Volshki Krai*, brought out some remarkable facts as to the effect of alcoholic indulgence on the death rate. The Kazan Tartars, numbering about 640,000, have a rate of mortality of only 21 in 1,000, while the mortality among the Russians is 40 in 1,000. The general conditions among orthodox Russians and Mohammedan Tartars are practically the same, except in so far as personal habits are concerned. The medical investigation leaves no room for doubt that the lesser mortality of the Mohammedan Tartars is directly due to their abstinence from spirituous liquors, in which the Russians indulge freely.

**TREATMENT OF BURNS.**—The most exquisitely painful burns are assuaged in a few moments by an application of campho-phenique after the following formula:

R Cocain hydrochlorate.....	gr. v.
Campho-phenique.....	3 ss.
Olive oil.....	3 ss.

M. Rub up the cocain and campho-phenique and add the olive oil.

A man whose hand had been torn and badly burned by an electrical discharge, the pain of which was so severe that he fainted twice before the dressing could be applied, expressed himself as without pain in less than one minute after the application.—*St. Louis Medical and Surgical Journal*.

**SIXTY-SIX YEARS MAKE AN "AGED" PERSON.**—The supreme court of Georgia thinks that it would be difficult to designate an exact period of life when one might with certainty be said to have become aged. And, while it concludes that the term "aged" as applied to human beings is not for all purposes susceptible of precise definition and that it is not practical to arbitrarily fix a period of life at which the condition of being aged may be said to have certainly begun, it holds, in the recent case of *Allen vs. Pearce*, that it is safe to say that a man 66 years old is entitled to an exemption of his property from levy and sale under that clause of the constitution of Georgia allowing this right to "every aged or infirm person," and this though he may be a hale and hearty man. In an English case it has been held that persons 50 years of age are aged, within the meaning of the statute of charitable uses, providing for gifts "for the relief of aged and impotent and poor people."

**FOREIGN BODIES IN THE EAR.**—Hummel (*Munchener med. Woch.*) makes the following deductions: (1) The relation of the normal ear canal to inanimate foreign bodies is entirely without reaction; that is, the foreign body in the ear does not *per se* endanger the integrity of the ear. (2) Every hasty endeavor at removal is therefore not only unnecessary, but can become very injurious. (3) In all cases not previously interfered with (with few exceptions) the foreign substance can be removed from the ear by means of syringing. (4) The general practitioner should never employ anything but the syringe in his endeavors to remove foreign bodies from the external auditory canal. (5) An instrumental removal of a foreign body from the ear should be effected only by one fully able to examine the ear with an otoscope and acquainted with every operative manipulation in this region.

**THE PASSING OF THE RETAIL PHARMACIST.**—At the annual meeting of the American Pharmaceutical Association held recently in Baltimore, Mr. Joseph Feil of Cleveland read a paper showing that the number of drug stores in the country is progressively decreasing, not only relatively to the population, but actually. The decrease varies in different parts of the country, ranging from 1.8 per cent in Pennsylvania in the last two years to 24.6 per cent in Texas. The total number of drug stores in the United States in the years 1896, 1897 and 1898 was said by the reader of the paper to be respectively 37,664, 36,463 and 35,467. Within the same period the number of wholesale druggists also decreased from 296 to 284. The reasons for the decrease, Mr. Feil believed, are the competition of the department stores, particularly in toilet articles, and the wide practice of price-cutting on proprietary medicines, to which might be added the growing custom among physicians of giving remedies in tablet form instead of writing prescriptions. Mr. Feil said that when the retailers number about 25,000, and the wholesalers about 200, equilibrium will be established and the decrease in the number of pharmacies will cease.—*Medical Record*.

**REPROACH OF ILLINOIS AND MICHIGAN.**—The state board of health of Michigan complains that graduates of the Independent Medical College of Chicago are constantly being registered in that state. They confess their inability to prevent such registration under the present medical practice act of the state. Perhaps in no branch of legislation has more educational work been done within recent years than in that respecting the relation of the professions to the state, and particularly the medical profession, and it must be recognized as a surprising condition of affairs that these two progressive commonwealths have remained stationary while others have made marked and commendable advances. A law that in Illinois permits the existence of such a notorious fraud on medical education and on public confidence as is this institution styling itself a "college," and a law which in Michigan permits the graduates of such frauds to be registered as medical practitioners, are a reproach to the whole people of both states. It cannot be that another legislative session in either state will be allowed to pass without a correction of these defects.—*Medical Standard*.

[This institution also gives dental diplomas "while you wait."—ED. DIGEST.]

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